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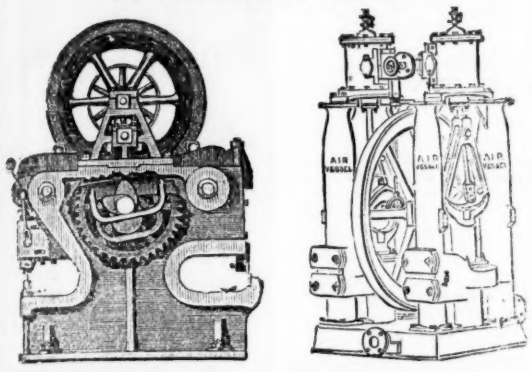

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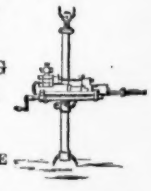

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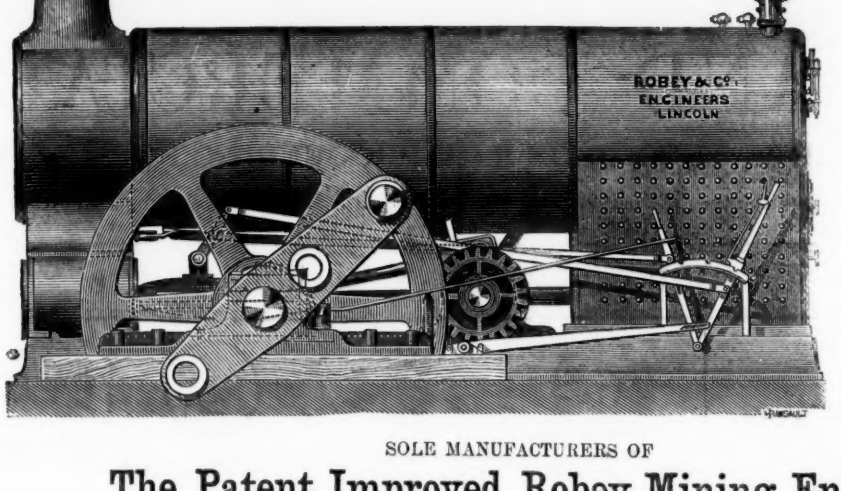

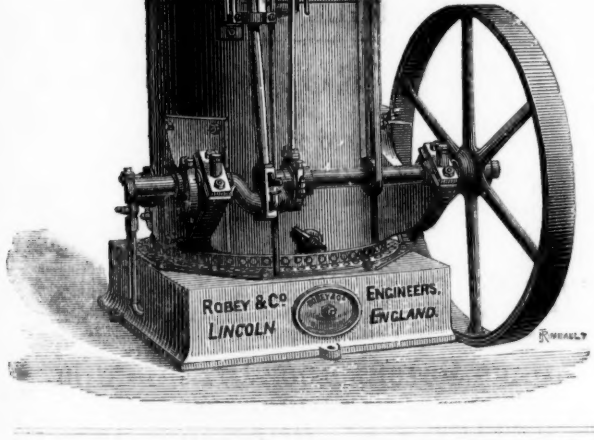

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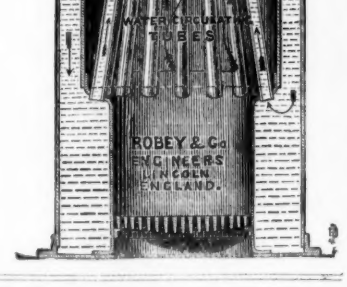

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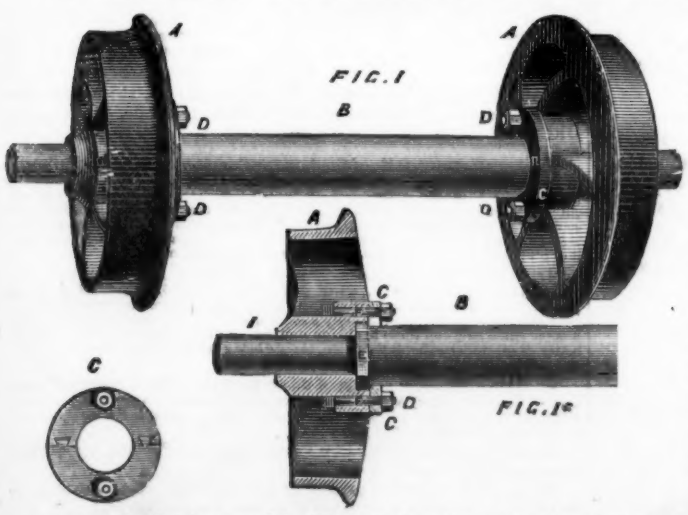
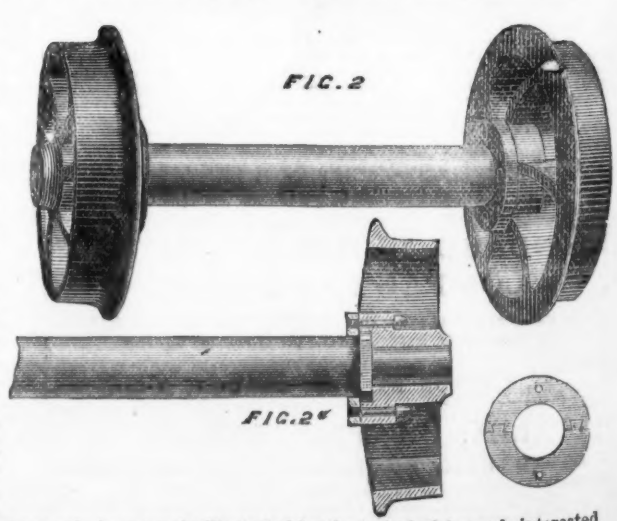


Figs. 1 and 1a show a longitudinal view and plan of a pair of corf wheels and axles fitted up for outside bearings. A A, are the wheels; B, is the axle; C C, the washers; D D, the bolts; E, the collar on axle B; and F, the recessed boss in the wheel.

The wheel is cast with a recessed boss in the inside, made to any shape, corresponding in shape and depth with a collar formed on the axle. Figs. 2 and 2a show a longitudinal view and plan of a pair of corf wheels fitted up for inside bearings. The washers are secured to the boss of the wheel in outside bearings by bolts and nuts, and in inside bearings by set screws.

The advantages of the above system are:—A, the singular simplicity of fitting—enabling any inexperienced person, with the aid of a spanner or screw-driver, to detach the wheels from the axle or fit them together in a very short time. B, perfect solidity, the wheels and axles becoming as one piece. C, durability, no need or putting the wheels or axles into the fire, under any circumstances, which is so detrimental to wheels, rendering them remarkably brittle, and which under other systems are detached from the axle by the aid of fire. D, economy in fuel and wages, saving hundreds of pounds yearly to large coal owners. The



important desiderata secured by this invention of simplicity (so often wanted in patents), solidity, durability, and economy, have not only been amply illustrated by the technical journals interested in the progress of mining operations in this country, but have at once been fully recognised by leading authorities in the mining world.

Original Correspondence.

UTAH MINES, AND THEIR GEOLOGY.

SIR,—I forward you herewith Mr. Wm. Bredemeyer's description of Utah's mines, and their geology. I resided, as you are aware four years in that territory, and know every mine and canyon described by Mr. B., and have no hesitation in saying that he shows a sound practical as well as scientific knowledge of the matters described; in fact, I may say that it is the most interesting and most accurate description of the mines of Utah I have yet read, and should therefore, like to see a good abstract of it in the *Mining Journal* That part relating to the Emma Mine will be very interesting, especially where Mr. Bredemeyer proves what I stated three years back—that large ore bodies will be found under the slide in the Emma Mine. All the other mines on the same bed vein are now below the slide, and producing quantities of ore. My conviction is that the Emma Mine will not turn out an exception to the general rule.

Palace Hotel, San Francisco, Feb. 28. HENRY SEWELL.

[The subjoined is an abstract of the paper by Mr. W. Bredemeyer, M.E., U.S. Surveyor for Utah and Idaho, to which Mr. Sewell alludes.]

Most of the mining districts of Utah Territory are confined to two principal mountain ranges—the Wasatch and the Oquirrh—which run on each side of the Jordan Valley, and almost parallel to each other. The Wasatch range extends from the territory of Idaho, as the northern boundary of Utah, to the Colorado river at the south, running in a south south-westerly direction through the central portion of Utah, and forming the division between the Great Salt Lake basin on the east north-east and the waters of the Colorado river on the west south-west. The flanks of this range differ materially in their geological structure and appearance. The eastern flank is formed either by a series of broad terraces and plateaus, or the same appears in long waving ridges and slopes, such as are peculiar to the apex of the coal formation. In the eastern flank we observed mainly the sandstones, shales, and limestones peculiar to the Cretatious and Tertiary ages in which appear the coal beds known in Utah Territory. The western flank of the Wasatch is very steep and abrupt, and comprises the older crystalline rocks of the Silurian, Devonian, and the Carboniferous ages, in which appear the rich mineral deposits for which Utah is justly celebrated amongst the treasures of the United States of America. The altitude of the Wasatch range varies between 8000 and 13,000 feet above the level of the sea. It is also a peculiar phenomenon that the dislocations of the formation on the western flank are more numerous and extensive than on the eastern.

The Oquirrh range commences at the centre of the Great Salt Lake, and extends far into the southern part of the territory. The formation of this range is entirely of the rocks peculiar to the Silurian, Devonian, and Carboniferous ages, and shows a series of extensive breaks and faults. Both mountain ranges are crossed by extensive dykes of eruptive rock, representing principally syenitic and dioritic porphyries. Besides these principal mountain ranges of Utah are three others of less extent—the Onoqui (or Scull Valley) range, the Cedar range, and the Snake range, which forms the western boundary line of Utah between the territory and the state of Nevada. The formation of the last-named two ranges consists of granite, porphyries, basalt, Silurian schists, quartzites, and lava. There is as yet little known about the mineral wealth of the last-named three ranges, as the same have been explored by the hardy miner only in a few places, but such explorations as have been made give great hopes for their future and the future of Utah at large, so I shall confine myself to the mining districts situated in the Wasatch and Oquirrh Mountain ranges.

Going eastward from Salt Lake City the Uintah mining district is the first on the Wasatch range; it begins about 30 miles east south-east of Salt Lake City, and adjoins Big Cottonwood on the north and north-east side. The general geological structure is quartzite and calcareous shale of the Carboniferous age, and in all probability overlying the granite, which appears in the southern and south-eastern part of the district. The veins appear, first, as true fissure veins cutting through the strata; second, as bed or strata veins, lying between the strata, and conforming to the course, foldings, and dislocations of the same. The gangue of the veins consist of brecciated material from the inclosing wall rock, together with quartz and earthy infiltrations and other silicious material as result from said infiltrations. The ore in most of the mines is milling ore. There is smelting ore in some, appearing as carbonate and sulphide of lead. The milling ore appears as chlorides, su phides, and native silver. The leading mines of this district are the Ontario, a fissure vein, explored to a depth of 500 ft., and to a considerable distance by east and west levels. The property is worked by a company with a nominal capital of 2,000,000*l.*, and has returned two dividends of 10,000*l.* each within the past six months. The Cottonwoods districts commence about 14 miles south-east of Salt Lake City, and are situated in the highest portion of the Wasatch range, from 9000 to 11,000 feet above the level of the sea. Little Cottonwood canyon is a deep gorge 15 miles long. Big Cottonwood canyon splits itself into several parks, and in the aggregate with its different parks over 40 miles long. The lower part of the Cottenwoods cuts through a large grand mass of granite, extending northerly and southerly, and rising in solemn awe inspiring grandeur more than 2000 ft. above the level of the canyon. This granite rises out of and above a mass of schist and crystalline rocks. Proceeding easterly up the canyon we observe a mass of coarse-grained in places porphyritic rock, containing quartz veins, with galena, copper, silver, and antimony. Overlying the granite we observe a mass of schiste, 1200 ft. in thickness, dipping from east north-east gradually by Emma Hill north. Above the schist we observe about 300 ft. of crystalline lime, then 250 ft. of metamorphic sandstone, commonly known as quartzite; then a layer of schist, varying in thickness from 20 to 40 ft., and crowing all a mass of Silurian limestone nearly 2000 ft. in thickness In this limebelt appear the Cottonwoods' treasure chambers, known as the Carbonate, Reed and Benson, Ophir, Ohio, Emilie, Rough and Ready, Nabob, Flagstaff, South Star and Titus, Morning Star, Vallejo, Full Moon, North Star, Savage, Emma, Caledonia, Davenport, Richmond, Theresa, Prince of Wales, Wellington, Antelope, and many other mines.

Advancing further eastward we observe Virginia Mountain, rising as a second mass of granite distinct from that first mentioned. This second mass has split the upper part of the canyon in a north and south fork. This second upheaval extended across the canyon, and is observable on the side of Emma Hill Tunnel. Thus we have two upheavals—the first from the west throwing east, the second rises through the mass of rock so thrown, and exerting merely laval influence by faulting said mass to a slight extent. Passing along the wagon road from Alta to the Emma Mine we observe another mass of granite, which fact, taken together with the other masses of granite, should demonstrate beyond dispute that the granite underlies the whole of both districts. The formation belongs to the Palæozoic age, for all that the specimens of algæ and other fossils found in the fetid lime of the Cottonwoods in reality belong to the Azoic; still the metamorphic action to which the rock has been undeniably subject verifies the conclusion of a Palæozoic origin. On the Davenport hillside the second upheaval has raised a series of rocks, which contain a quartzite, but only schist and copper schist overlying the same, which fact demonstrates the destruction of the missing strata by action of the upheaval. This part of the Davenport Hill is very extensively traversed by several dykes of a hard compact trap, hardly distinguishable from the surrounding lime. Two of these dykes pass within the vicinity of the Victoria Tunnel mouth. The upper dyke runs north, passes the Imperial, and crosses the divide by the Davenport Mine. A fault in the northern part or end of the Emerald Hill forms a synclinal curve in the ridge to within a short distance of the Wellington Mine (Little Cottonwood), passing thence over to the American Fork mining district. Another fault on the southern flank of Patsy Marley corresponds with the northern fault, which caused the absence of sandstone and schist. The missing rock is visible to within a short distance of the break itself, which fact verifies the foregoing conclusions. It is undeniably beyond dispute that the varying character of the Cottonwood ores was caused through and by the influence of the different country rocks. Emma Hill shows carbonate of lead and galena in dolomite, and between dolomite and caloite soft oxides with galena in the fetid lime. In the granite we observe sulphate of silver, galena, and iron pyrites, oxides of copper, and carbonate of copper. Of course, there are exceptions.

In the upper bed on Emma Hill the ore deposits appear as parallel ore chimneys on the east and west line. In the lower or Emma ore belt the deposits appear as segregations or pseudo-morphic displacements on an extensive scale. Nature in her curious and mysterious works has caused here the different fissures so to run and join each other as to form to all appearance a well-defined strata vein, which in reality it is not. By a close observation it will be seen that the ore does not occupy a real vein fissure, but that the mineral solution circulating and ascending from below has entered into all and every open space of the extensively fissured rock, reacted on the same, dissolved the carbonates of lime and magnesia, and deposited in its place the mineral wealth as we find the same at present. An illustration of the action is observable on the Flagstaff, South Star, and Emma Mines. Here the wall rock is decomposed in the line of fracture, apparently washed by water, and rough projecting boulders show the actions of mineral reagents upon the same. Every small seam of vein matter should be followed up, as the same will and must lead invariably to larger deposits of ore, and may lead to bonanzas. An examination of the ores beds shows that they were formed subsequently to the great upheaval, by ascension from below. Descending we observe the action of the igneous rocks more frequent, trap dykes traversing the lower beds; in association with these dykes are observable large deposits of ferruginous ores. Some of these dykes seem to be of a granite origin, changing gradually to a porphyritic character, and then disappear, after having run a short distance more in the lime and quartzite. All the ore deposits are of a more recent origin than the dykes, but all more or less in connection with the same. Sometimes the porphyry has been removed by pseudo-morphic action, and has been replaced with ore, given the appearance as when the formation of the ore deposits were the secondary effect of the igneous eruptions. The strike of these ore deposits is in most cases in conformity with the general course of the dykes. The Emma, Davenport, and other hills are connected with such dykes, and it is very suggestive to suppose the dyke is instrumental in the formation of the ore deposits, more so as those deposits contain traces of the dyke material.

Passing to the north of the Emma ore deposit is a deeply marked fault, which identical fault has been traced in the main shaft, the Illinois Tunnel, where a level was run by the North Star to a length of over 300 ft., and a shaft was sunk 90 ft. below the tunnel, exposing the fault to a considerable extent. The grooving of the walls of the said fault shows a throw from above down the hanging wall of the fault, so that the dislocated part of the ore deposit must be looked for below on the hanging wall of said fault. The throw of this fault is furthermore indicated by a so-called dirty trail plainly visible in the Atwood winze of the Emma Mine. The fault has crushed a great quantity of the limestone in the lower part of the air-chamber, which said part is filled therewith, and time has made this crushed mass so compact that it appears at first sight as a limestone formation floor, as is plainly visible to a depth of 25 ft. in the Flagstaff, 40 ft. in the South Star, 90 ft. in the North Star, and also in the Emma Mine. This compact nature has been acquired by heat, generated by friction on the fault surface. This fault can be traced from a point west of the Flagstaff, through the Flagstaff, South Star, and Titus to the Vallejo, and from a point east of the Emma through the Emma, North Star, Monitor, Magnet, to the Caledonia Mine, which makes the chain very nearly complete. The continuance of the ore deposits below this fault is proved in the Flagstaff and South Star Mines, and there is no doubt but the dislocated part of the deposit will be found in the Emma Mine also. The hanging-wall of the deposit is dolomite, and the footwall is calcite, the first of the Silurian and the latter of the Devonian age. Outside of the ore deposits in the limestone there appear in the Cottonwoods also small veins in the granite, of which a vein called the May Bird lode, situated in the mountain, south of and nearly opposite, Tanner's station, is very characteristic. These veins in the grate have a true quartz gangue, and well defined walls, and contain a higher percentage of silver generally than their sister lodes in the limestone. The lodes in the quartzite formation appear first as true fissure veins, cutting the formation at various angles. Characteristic of such veins are the Alpha and the Superior lodes; second, as strata or bed veins conformable to the strata in which they are embedded.

(To be continued in next week's Journal.)

GEOLOGY OF THE PACIFIC COAST.

FACTS POINTING TO THE TIME WHEN THE INTERIOR WATERS FORMERLY EXISTING BETWEEN THE WEST OF THE ROCKY MOUNTAINS AND THE COAST RANGE OF THE PACIFIC WERE LIBERATED.

SIR,—May I be permitted again to intrude upon your space in kindly allowing me to reply to some enquiries as to the data in regard to the period when the unwatering of the two extensive inland seas west of the Rocky Mountains took place, and in which I have alluded in a former letter, politely published in your valuable Journal? I arrive at the conclusion as to about the time that these great internal waters of the Far West—the vast fresh water lake, which extended from Oreville north, to the most southern boundary of Tulare, the bottom of which now forms those productive valleys of the Sacramento, San Jaochin, and San José, and in which water the Mount Diablo range formed a bold peninsula in its midst—as also the extensive area now known as the Great Basins, which formed the boundary of a grand inland sea confined between the ranges of the Rocky and Sierra Mountains.

The answers to these enquiries for the evidences of the facts are most simple and unmistakable to any man of common observation in passing through the countries in which they formerly existed. As the Divine Author of all things has not left Himself without evidence in the formation of this globe, so in these vast changes that have been ordered by the same Almighty Power has he left equal proofs of His works.

The standing indices of these facts are, in the first place, the line of demarcation shown by the ancient timber standing on the mountain sides, which everywhere displays an abrupt irregular line of large pine timber of centuries growth, below which line are found the water-washed rocks and sandy deposits which formed the shores on which the waves of those inland waters had broken for centuries, and clearly define the margins and levels at which these inland waters stood.

All the trees of modern growth and size that are now found in these unwatered valleys are the cottonwood, which is a timber of soft texture and rapid growth, and extremely succulent, and this timber is only found on the banks of fresh-water streams at low levels, and where other freely-growing trees of the same class and of the willow species are found, each of which partake of the same essential identity.

In the Great Basin added to the above facts which are perfectly indisputable as regards the pine-grown timber, which was conspicuous at the early date at which I first crossed "The Plains" (as that portion of the Continent was then called) in 1861—for on the crest of every hill which stood a few hundred feet above the level of the then existing depressions of the country the large pine-growth was most conspicuous, forming remarkable features on the crests of these elevations amidst the sterility of that wild landscape.

These fine landmarks have now generally disappeared, as the giant monarchs have been laid low for the use of man in assisting him in the development of the mineral riches that were embedded in the unwatered country that originally surrounded them.

On the ancient shores of this vast formerly inland sea are now found at an elevation of more than 500 ft. above the level of the Pacific Ocean marine fossils in perfect preservation, which may be picked up amongst the ancient shore-wash in several varieties.

The large beds of salt that are met with in every shallow depression of this extended area are the certain evidences of the whole extent of this grand inland sea, and the quality of the salt now remaining deposited by evaporation on these saline beds resemble by examination all the characteristics of marine salt, and the remaining deeper depressions are filled by saline waters, varying in their saliferous contents according to the amount of fresh water that now flows into them—thus the Great Salt Lake, the level of which now stands at 4200 ft. above the Pacific, and is the largest existing basin, the waters of which are more saline than any part of the ocean even at the Equator, and consequently so buoyant that the substances which sink in the ocean will float on its surface.

The other waters of this basin, as the Pyramid, Carson, Mud Lakes, &c., which are below the level of the Great Salt Lake, are less saline, their surface being smaller, and, therefore, are not exposed to the same amount of evaporation during the summer.

The mineral formations with the Great Basin show the evident action of the supersaturation of salt water, as in many instances the silver ores have been to a very considerable depth converted into chlorides to a greater or less degree as the surrounding rocks were more or less porous; and this fact has caused many of the mining adventures in that part of the continent to have miscarried, as appliances have in the first instance been erected for working these chlorides, and in getting into the depth below those saline influences the sulphurets present themselves, which, consequently, require different treatment, and have caused great loss to the owners of the mines.

The fissures formed by the great convulsion by which these internal waters were liberated are still in active working; consequently, these inland lakes are very slightly increased in surface area by any amount of water that may fall in their respective districts. An instance of this fact occurred in 1862, when there was a fearful flood over the Truckee Plains, caused by a sudden fall of rain on the surrounding mountains after the snow had deposited itself to many feet in depth, which caused an immediate thaw all over the thickly-crusted mountains, which brought down an immense torrent of water, causing the Truckee river to overflow its banks and cover the surrounding country for many square miles with several feet deep of water; but this great influx into Pyramid Lake, into which the Truckee flows, had but a very slight effect in raising the surface of the Lake, and in a few days there was not any perceptible difference in its level.

The Great Fresh Water Lake, the unwatering of which has formed those luxuriantly productive valleys of the Sacramento, San Joachin, and San José, which would had its debouch south of Monterey, and until the great event that opened its discharge into the ocean must have been as fine an inland water as any of those sister lakes on the eastern portion of the American continent; and but for the volcanic rent in the coast-range, which now forms the Golden Gate, the immense tract of invaluable land would have been of little use to the present generation. But that great catastrophe has left these extensively productive ranges of country on the western portion of the continent fit for the habitation of civilised man, and the rocks riven, and the waters let down, leaving one of the finest tidal ports in the world, with two fine navigable rivers abounding with fish, running at the foot of the mountains, rendering that whole country fit for the hand of man to till with great productive results the soil that has been rich deposit of previous ages.

The fertility of these great available tracts of productive lands forms now an inestimable blessing to all the human race, and their fertility cannot be surpassed, and even we in this country, far distant though we be, are the recipients of their fruitfulness, as all the wheat that is imported from California to Great Britain is grown on that inexhaustible soil. Indeed, wheat may be said to be indigenous to that soil, for formerly the whole of the Sacramento was covered with a wild growth of that plant, which grew in great luxuriance, and I have met with it so tall that I could not when standing on the ground reach its top, and I am 5 ft. 9 in. in height. The whole of this plain was formerly covered with this fine native plant, that grew in such abundance that I have counted 22 straws from one root, and in 1851 a horseman could ride from where the town of Bernecia now stands to the side of the river to where Marysville now is—a distance of more than 60 miles—passing through nothing but that luxuriant growth in the spring of the year. This at once pointed out its great suitability for the tillage and growth of cereals.

It is quite unnecessary in this paper to expatiate on the productive vineyards that now exist through these plains, where the growth of the vine was only introduced into that country in 1853, nor the orchards of the Chinese mulberry trees that now cover a large portion of the Tulare plains for the cultivation of the silkworm, nor to dilate on the extraordinary vegetable productions of the San José valley. These are so startling that were I to attempt to describe them most of your readers would look with suspicion on all my statements. I will, therefore (should they wish it), leave them to make their enquiries elsewhere.

Thus it will be seen that the great convulsion which overthrew the ancient city found by Captain Sitgreaves was in all human probability the cause of opening out two vast tracts of a then uninhabited country, to prepare it for a future population who would be enriched by the previous submerged treasure in the Great Basin, as also by that hidden wealth in the more western mountains, and likewise open up a vast field for producing the food for their sustenance and comfort.

Thus, if a man looks for evidences of great facts with which Nature abounds he will find the knowledge he wishes to acquire written in most indisputable characters by the Master's own hand.

30, *Grove-lane, Camberwell, March* 19. JACKSON BARWISE.

ROSSA GRANDE GOLD MINING COMPANY.

SIR,—I understood that when Mr. Gordon, late of the St. John del Rey Mining Company, arrived in England the shareholders in the above concern were to hear something respecting their position and the property. As to the property, it has been sadly mismanaged and damaged. The whole of the stores have disappeared; the machinery is left to rot, no water is put on the wheels, the woods are being destroyed in the most reckless manner to plant milho, and, in fact, whatever could be done to destroy this splendid estate appears to have been done; indeed, a notion is becoming prevalent that the property is being abandoned, and persons are locating upon it, and in a short time it will be with the utmost difficulty they can be moved. Gold from there and Gongo is being sold in various places—Santa Barbara, St. Joao de Minas Grande, &c., &c. The season will soon arrive when cutting timber to make new rocas (milho plantations), and the destruction which has been so long going on will be again repeated, and for what end? Why do not the shareholders in London meet and seek to protect their interests, and insist upon accounts from the board—who take no notice of letters addressed to them by me remonstrating upon the continuance of this destruction of the shareholders' property, or I should not have had occasion to trespass upon your space.

CHAS. H. WILLIAMS, Shareholder.

Serra de Cocaes, Minas Geraes, Brazil, Feb. 11.

ST. JOHN DEL REY MINING COMPANY.

SIR,—Sir John Swinburne, in his remarks upon the purchase made by the St. John del Rey Mining Company, at Cuiaba, at the meeting on Dec. 19, said that in 1870 a prospectus came out, asking 40,000*l.* for it, and inferring that the purchase for 70 contos (7000*l.*) was for the whole Cuiaba property. He might have been misled by what the Chairman and Mr. Tendron previously stated, leading the shareholders to infer that Cuiaba was a freehold, the whole of which had been acquired by this purchase for the St. John del Rey Company; it may sometimes be convenient to speak in generalities, but it leads very often to erroneous impressions. The facts are—the St. John del Rey Mining Company have bought of the heirs of the late James Penycuik Brown, under extraordinary favourable circumstances tending greatly to reduce the price, that portion of the property claimed by them, and held in common with other properties, all having equal rights so far as their shares go to prosecute mining anywhere they may wish upon the property. In England no such holding is known as in "commune."

The Cuiaba Gold Mining Company's prospectus issued in 1870, referred to by Sir John Swinburne, in which the sum of 40,000*l.* is

mentioned, was contemplated not only to purchase the parts then held by Mr. Brown, but the acquirement of the far more valuable portions, so as to reduce the entire property to a freehold; as it was clearly seen if this could be effected there was no doubt of success, while on the other hand the property divided as it is now is comparatively valueless to all parties. I presume Mr. Tendron has been misreported when he is made to say "The quality of the stuff I looked at near the surface was 8 oits. per ton." But looking at ore is not a very exact mode of finding out what the produce may be. However, I congratulate the shareholders on having obtained a footing at Cuiaba, for there is a mine which can be worked free from danger, and with all free people, and if they can now acquire the other interests they may be able to work the mines in such a way that although 8 oits. of gold may not be produced per ton at surface, Cuiaba, as a whole, will worthily follow Morro Velho, and sustain the dividends of the St. John del Rey Company long after Morro Velho shall have become unworkable.

CHAS. H. WILLIAMS,
Late Secretary Cuiaba Gold Mining Company (Limited).
Minas Geraes, Brazil, Feb. 17.

EXPLOSIONS IN COLLIERIES.

SIR,—As usual after the occurrence of heavy explosions, the Press abounds with articles containing suggestions for preventing those disasters. In one case we have a writer, apparently scientific, who says that he discovered "ten years ago that colliery explosions occur in twos." Alas! they too often occur in "threes" and "fours," and sometimes we have half a dozen in very close proximity. The consequences of an explosion in a coal mine are peculiarly horrible; the effect of the black dust and the force by which the bodies are blown about and against the walls, &c., produce effects of the most appalling kind. Anyone who has witnessed those effects will recollect the scene as long as he continues to live. The horrors even of a battle-field cannot produce any scenes more appalling. Mr. Hatton continues to point out that explosions occur from sudden changes of barometrical pressure, &c, a fact well known to all miners, and he suggests that "a practical system of storm warnings in connection with mines should be introduced, so as to give timely warning to the managers, and thus special and extra precautions might be used. All this is very well in its way, but the writer betrays utter want of practical knowledge of the subject when he concludes by saying that "Davy lamps ought to be enforced and blasting suspended so long as the storm signal is exhibited." Davy lamps, we contend, ought to be used in all mines if only suspected to be fiery. Nothing but the careful use of safety-lamps will prevent the occurrence of these destructive explosions. As the late David Mushet remarked in the Journal about, we think, 25 years ago—"Only the safety-lamp will conduct us through the labyrinths we have created in our coal mines." We are not quite clear on the point, only writing from memory, but think that at that time Mr. Mushet was advocating a more simple and effectual mode of ventilation. Since that day great improvements have been effected in ventilation, but the safety-lamp is still absolutely necessary, and probably will ever remain so. The last Mines Act is a very good one, and it will, probably, be difficult to frame any better Act, but one important clause in it has not been carried out. Perhaps if the intention of this clause were made more clear, and the literal working of it insisted upon great good might be the result—we allude to the first clause relating to certificated managers. VIEWER.
Newcastle, March 20.

THE LONDON COAL SUPPLY.

SIR,—The correspondence in the Journal of Jan. 26, Feb. 2, and March 9 and 16, may, I submit, be not inappropriately, but apposite-ly, supplemented by inviting reference to the Commercial Review of 1877, in the Economist of the 9th inst., which states:—"Ship plates, which cost in 1876 8*l.* 15*s.* per ton, and in 1877 7*l.* 10*s.*, can now be bought at 6*l.* 5*s.* Steamers with compound engines and all recent improvements can now be bought at from 10*l.* to 12*l.* per ton dead weight carrying capacity, or 15*l.* to 17*l.* per ton register—rates without precedent. Iron ships, with first-rate outfits, which cost in 1873 19*l.* per gross register ton, and in 1875 15*l.*, can now be bought at 13*l.*" It is, consequently, evident the moment is most propitious for building such a large fleet of screw-colliers, as will be required to convey South Yorkshire and Derbyshire coal to London and Paris.

The half-yearly report of a large colliery shows a fraction under 5*s.* 10¾*d.* per ton only has been realised for house coal. With actually 140 to 155 per cent. for conveyance by rail to London on this and other coal, will the coalowners, thoroughly convinced of their suicidal policy by rail carriage continue to cast to the winds the uncompromising evidence of the following towering sources in favour of water carriage—the Chairman of the London and North-Western Railway Company; the State Comptroller of the United States of America; the New York Chamber of Commerce; French Government returns of Belgian, French, and English coal conveyed by water and by rail to Paris; British Consular Report of coal conveyed from the German collieries on the Rhine; Capt. (now Sir Henry) Tyler's general report on the working of the railways of the United Kingdom, so ably commented upon in the Edinburgh Review, April, 1876, which states, page 361—"Attempts are said to have been made by more than one railway to cripple the coasting trade by obtaining command of the ports. There can be no doubt that the low cost at which the Newcastle and Durham coal can be delivered by sea in the Thames is the one great safeguard to the public which has kept down the railway freight of coal over the whole network of our lines." The chief traffic from St. Petersburg to Odessa, in lieu of taking the direct route by rail—1945 versts, or 1297 English miles—takes the circuitous, long, but much cheaper, including transhipment, sea route *via* England, a distance of 4301 miles. A report by the State Engineer (U.S.A.) on the canals of the United States, sets forth that cereals are waterborne to the seaboard at rates equivalent to one-sixth of the Russian railway rates. Water transport enables the Californian farmer to compete in the markets of the world with the peasants of Central Russia, in spite of a distance of 10,000 miles or more. The New York Bankers' Magazine ascribes the displacement of Russian by American cereals in Western and even Eastern Europe to the superior transit advantages in the United States by means of water carriage. The Minister of Finance in St. Petersburg, although I submitted proofs of transporting grain by the Wolga at rates immeasurably lower than by rail, told me at a special audience that the Government could only throw their ægis over the construction of railways, and on no account incur any responsibility as to the improvement of the water courses, it being well known that English loans have been appropriated to the construction of military railways, and in no manner as held out by the Imperial Government for developing commerce and cheapening the transit of grain. In the East Indies, from Calcutta to Goulanda, 200,000 tons were conveyed by railway against 1,700,000 tons by canal, with a delay thirty times greater than by rail, on account of the much lower rates by water. With the "mountain in labour bringing forth a mouse" in the shape of a reduction of 9*d.* per ton from Yorkshire to London by the proposed new line before Parliament of the Great Eastern, opposed *à l'outrance* by the Great Northern and Midland, the eyes of all thinking men will do well to open to the future development of the Yorkshire and Derbyshire coal trade.

With every due respect, may I be permitted to ask in what better comparative position are the coalowners in question than the subjects of Abdul Hamid? Turkey is unjustly stripped of her richest most profitable provinces; and the coalowners working their valuable mineral deposits without profit; the coal hewers' wages reduced and their families impoverished, simply by reason of paying an exorbitant rate of carriage to the Metropolis by railway, which the Durham and Northumberland coalowners studiously eschew. The Yorkshire and Derbyshire coalowners by following the mode of sea transit pursued by the coalowners of Durham and Northumberland are in a position to monopolise the London market, and to put into their own pockets and their dependants' the thousands of pounds they are year by year literally squandering upon railway carriage. One Durham coalowner has upwards of 100,000*l.* invested in screw colliers; and Turnbull's Shipping Register before me shows all the chief collieries have their own screw colliers to convey their outputs to London, which fall far short of the proposed system in economy of transit and delivery. W. J. THOMPSON.
Little Tower-street, March 19.

THE COPPER TRADE, AND ITS PROSPECTS.

SIR,—The writer of the article "The Copper Trade, and its Prospects," in last week's Journal, alleges that there was a mistake in our statistics of March 1, that we gave the quantity of Chilian copper afloat as .....Tons 11,900
Whilst he makes it only 10 661
We beg to say that our figures are perfectly correct. The quantity afloat on Feb. 1 was .....Tons 10,908
Of this quantity there arrived in February 3,411
Leaving 7,497
Add the new charters 4,400
Making a total of .....Tons 11,897
The following arrivals also took place in February, but not having been mentioned in the official Chilian lists were not included in our afloat figure of Feb. 1: Achievement, from Valparaiso; Broughton, from Pisco; Jessie Stowe, from Pisco; Pacific, from Mollendo, representing fine copper, about .....Tons 439
Further by the City of Valparaiso, from Boston, U.S. 730
Making together .....Tons 1,139
This last lot had been shipped in January, 1877, from Chili to Boston, U.S., and had been stored there about 12 months, consequently we had to strike it off in our previous returns. We, therefore, repeat the figures in our circular of March 1 are quite correct, and the total stocks in Europe, and afloat for Europe, were on March 1 .....Tons 47,241
Not, as stated by the writer of the article 46,000
Leadenhall-street, March 21. HENRY R. MERTON AND CO.

THE TIN-PLATE TRADE.

SIR,—In my last I stated that whatever might be the croakings of writers and persons interested in the important branch of tin-plate making, it was evident from the activity displayed, and the enlargement of works, the business had not during the past year been unprofitable. Though prices are somewhat weaker, owing to the great output, of which the merchants are never loth to take the advantage, it is self-evident that the makers expect ere long to find business more profitable. The stoppage of Kidwelly Works has not made the least impression, for have not the old and large works called the Upper Forest in the Swansea district been retaken, from which large quantities of plates will soon be thrown upon the market, and from what I hear reported the fact has somewhat damped the expectations of makers, who were in daily hopes of advancing prices. There are likewise several other works in course of erection in that and the Neath districts. The proprietors, therefore, do not expect tin-plate making to be a losing game, or they would never have ventured to sink their capital in that direction. If the iron-making proprietors could only obtain the profits derived from the tin-plate making, we should find all those haunts of industry in full swing in a short time. In that branch competition will be stronger than heretofore, as America can now manage to work it much cheaper than in times past; a great revolution in price of labour, with the protection of high tariff, will enable them to outdo the English manufacturers. The steel making is another drawback to iron for railway purposes, and what is greater than all, the non-extension of lines here or abroad. The export coal trade is on the increase, notwithstanding the great depression existing in almost every coal district in the kingdom. Many young colliers are leaving that industry for others, finding it almost impossible to earn sufficient to eke out a living. Through the rapid extension of tin-plate works, by erection of new and adding to old, skilled hands are getting scarce, and at the rapid rate of extension competition must arise between makers to fill up the varied branches, hence a possibility of a rise in wages before long. It is difficult to make workmen believe that the business is a losing one, when their own eyes can see what is going on in all directions. It would be much more prudent on the part of employers if they remained content, and working quietly without any intentions of driving on work to the fullest extent, as if orders were so plentiful and profitable that they wished to make money while they could. Doubtless some are trying hard by pushing on and thus filling the markets to drive the small and weak makers to the wall, and then by some masterly movement to obtain a monopoly, and drive their own bargains with the merchants. If such is their game, I trust that they will be frustrated in their object. We shall wait; see and record the result in some future communication. DOUBLE X.
Llanelly, March 18.

PRIZE BLOW-PIPE APPARATUS.

SIR,—Having been in my younger days a student of the Miners' Association of Cornwall and Devon, I learnt in the classes to use the blow-pipe, and I still retain some knowledge of that useful and indispensable instrument, and I would like to make some observations on a letter on the above subject, which appeared in last week's Journal, by "Another Constant Reader," which needs correction. Speaking of the prize offered by the Society of Arts for the best blow-pipe box, your correspondent remarks "it is very doubtful whether it was wise to fix the price so low as a guinea." I would remind him that at least two of the gentlemen forming the committee which determined the value of the box were eminent authorities on mining and mineralogy. I alluded to Professor Smyth, F.R.S., and Dr. C. LeNeve Foster, the latter being one of the greatest pyrologists in the kingdom. Now, surely these gentlemen ought to know their business. Your correspondent forgets that the box is intended for the class-room, and for the students' and miners' use in out-of-the-way places, and not for the sanctum of the professor. The committee intended a box of appliances that would meet the wants of the great body of students all over the world, many of whom are not affluent, and not for Plattners, Richters, and Rosses, and the apparatus prepared by Messrs. Letcher appears most satisfactorily to embody the ideas of the committee.

That the apparatus contains everything that is necessary for performing such examinations of substances as are made in science class-room, or that may be required by the student in his excursions or the miner in prospecting in remote parts of the world, may be safely assumed. Dr. Foster, who had the examination of the different cases, would not be satisfied with anything that came short of this. Having been a great traveller in different parts of the world, and having studied blow-pipe analysis in the land of Plattner, and being once a teacher of science classes, he certainly ought to know whether a guinea box would be sufficiently comprehensive for the purpose or no.

With regard to aluminium plates, of which your correspondent thinks so highly, the cost is the reason why one was not inserted in the box. Where so many articles have to be included every shilling's worth is of great consequence, and comparatively costly articles that are not essentially necessary have to be avoided. Being so thin an aluminium plate can, no doubt, be easily packed in the box if required, but even then the dirty charcoal would be needed. It is easy to call a thing barbarous, and yet not be able entirely to supersede it. The committee would, no doubt, have stipulated for the insertion of one of these plates if they were such a desideratum. Great men vary in opinion. The Freiberg folks, in their latest edition of Plattner, do not even notice Ross' aluminium plates.

If by offering a prize of 20*l.* a set of apparatus equal to Lindke's 18*l.* set for all practical purposes (minus the costly balance) may possibly be had for 5*l.*, who shall say that the prize box now obtainable at a guinea may not contain all the appliances for work included in sets of two or three times its value? It seems reasonable that it should be so, according to "Another Constant Reader's" argument. Furthermore, are not a great many of the articles in Lindke's box useful only for quantitative analysis? Of what use would these be without the costly balance to supplement the box? And, in addition to the larger box, the supply box of grease or oil, spirit, &c., must be taken on journeys. After all, is it not premature for your correspondent to say what can or cannot be done with a box of which no description has yet been given by the society, or any person?
BLOW-PIPE.

AIR-COMPRESSING MACHINERY.

SIR,—I have to thank you for your notice on my Air-Compressing Machinery, in the Supplement to the *Mining Journal* of last week, and beg to state that the contract for driving 1000 linear feet in the Eberhardt Tunnel has been completed. The distance driven in up to March 7 was 2671 feet. A fresh contract has again been made, and is being driven rapidly forward with the compressed air rock-drills.
Newcastle-upon-Tyne, March 21. J. G. CRANSTON.

ROCK DRILLS.

SIR,—We notice that Messrs. Salmon, Barnes, and Co. have been kind enough to publish in last week's Journal the correspondence that has taken place between them and ourselves on the subject of a trial of rock-drills. In our letter of Feb. 25 to Messrs. Salmon, Barnes, and Co., we said—"Our object was to have an exhaustive and *instructive* trial, and for this reason we wished to compete with a number of drills at the same time." In the Journal this reads "exhaustive and instinctive trial." From the correspondence you will see that we have not declined the challenge of the Roanhead drill, but Messrs. Salmon, Barnes, and Co., although accepting our challenge, would not conform to the terms on which we gave it, and which have appeared in the Journal.

Our reason for making it a *sine qua non* that each competitor should find his own plant was to prove that the Ingersoll drill would do better work with a considerably less expenditure of power, thus demonstrating one of its economies. Taking into consideration the expense, we would of course have preferred an exhaustive trial, such as we proposed, but we cannot see what advantage it would be to anyone for the Ingersoll drill to run against the Roanhead drill only. LE GROS, MAYNE, LEAVER, AND CO.
Queen Victoria-street, March 21.

ROCK DRILLS IN THE ISLE OF MAN.

SIR,—Having just seen in last week's Journal the letters of John Barkell and "Alpha," I hope you will allow me a small space in which to reply. Not having the information asked for at hand, I must leave the particulars stand over until your next issue. To satisfy your correspondent "Alpha," however, allow me to state that the Ingersoll drill is at work in three different places in the Isle of Man—the Great Laxey Mines, the Manx Mine, and the Harbour Works, Douglas. At a week's trial of this drill at the Great Laxey Mines the work done was nearly five times as much as was hitherto accomplished by hand labour, and at nearly half the cost. Particulars will appear in next week's Journal. During my visit to the Manx Mine nine holes, each 3 ft. deep, were bored by one of these drills in a little over three hours, not bad work when it is understood that the men working it had no previous experience of drill work. To satisfy "Alpha" on another point, I may inform him that I have seen the following drills at work in different places, and can, therefore, speak with some little authority—the Barrow, Dunn, Darlington, McKean, Warsop, Burleigh, Brydon and Davidson, Ingersoll, and, lastly, I have just returned from seeing the Eclipse drill at work in Scotland, which last is in my opinion the drill of the future. I hope "Alpha will not worry himself. I have pronounced the Ingersoll drill faulty, there being too many parts to wear and tear, which must be fatal to it, but I certainly would not put it on one side and use either of the other drills now in the Isle of Man in its place. In conclusion, allow me to remark that I am not personally interested in the Ingersoll drill. J. WILLIAMS.
London, March 20.

THE KESWICK UNITED SILVER-LEAD MINES COMPANY (LIMITED).

SIR,—Being a shareholder in this undertaking, and holding a certificate dated July 10, 1872, signed by John Bell and Joseph Allen (directors), and counter signed by James Farie, I shall be glad to ascertain if any of your numerous correspondents can afford me information as to the position of the company. A rumour states that meetings have been held, one so recently as Tuesday or Wednesday last week, but no notice of which was received by me, I, therefore, ask the officers of the company, through the medium of the Journal, how this is; also for particulars of the present position of the mine, and the favour of replies to the following queries:—

1.—What was the original amount of purchase, either in cash or shares, or both?

2.—What is the amount expended on the mine to date, inclusive of merchants' bills, labour, &c.?

3.—What has been the amount of expenditure, inclusive of directors' fees, rent, salary of secretary, and incidentals?

4.—Agents' salary at the mine, and total of monthly expenditure?

5.—The quantity of ore raised and sold from the commencement of the company's operation to the present time?

I trouble you with these enquiries, which may seem to convey an impression that as a shareholder I feel myself aggrieved at not having been treated with common courtesy, or even with even-handed justice. Should such a construction be put on my act, I may state that it is a truly correct one. A SHAREHOLDER.
City, March 15.

LEAD MINING IN SCOTLAND.

SIR,—Will you kindly permit me to offer a few remarks that may be of a little assistance to those who wish to risk their capital in mining enterprise on this side of the Tweed? Some correspondents in the Journal have taken notice of what is asserted to be the discovery of a payable deposit of lead ore at Lossiemouth, in the county of Elgin. In the case of this proposed mine at Lossiemouth I cannot pretend to speak from great knowledge of the locality, but if the experience I have had of lead mining has taught me anything it leads me to look—having in view the premises stated in the Journal—on the undertaking with very grave suspicion. There are several striking, but not necessary favourable, features described in connection with the proposed mine at Lossiemouth, besides some striking proposals made as regards the working of the sett, but just now I shall only advert to one of these features—the excessive width of the lodes. I would not condemn altogether mining in very wide lodes, but it is well known by practical men that there is great expense, and in most cases considerable danger, in conducting operations in mineral veins exceeding 10 or 12 feet in width, and I would consider a lode only 60 inches wide and well developed a much better evidence of a remunerative mining speculation than the one stated to exist at Lossiemouth containing a quantity of ore distributed over a width exceeding 100 feet; in fact, to have ore streaked through a course of stone extending from 30 to 120 ft. in thickness is more an evidence that the vein is broken up and frittered among the rock of the country than that it exists in a form worthy of attention. Mr. R. Tredinnick in his letters on the formation of mining companies, when showing the danger to investors in some cases by their acquiring shares in mines of good repute, refers in one instance to a Scotch mine, along with two others worked by Limited Liability companies, and, if I am properly informed, all brought out by the same promoters. Although, judging from his letters, Mr. Tredinnick's information regarding lead mining in Scotland is not entirely complete he, in my opinion, in the points to which he refers arrives at very sound conclusions, and I hope he will yet follow his subject a little further, and show to what a disastrous extent the scope of the Limited Liabilities Act can be subverted, while vendors who are inclined to follow pernicious courses can easily gull the public, and at the same time in a great measure secure immunity from any legal action that may be taken by their victims. I would council capitalists who desire to speculate in Scotch lead mines to take advice from some reliable and independent authority before risking their money in any concern however much it may be puffed in pamphlets and reports by interested parties, or however good its previous reputation may have been.

Before the elapse of six months many members of the investing public may be able to judge whether they have or have not a short time since paid at least 100,000*l.* above its value for the right to work out the remainder of the lease of a lead mine in Scotland.

T. B. STEWART,
Manager of Queensberry Silver-Lead Mines.

Wanlockhead, Abington, N.B., March 20.

THE EXTRACTION OF THE PRECIOUS METALS FROM ORES AND PRODUCTS.

SIR,—Everyone has heard how in the good old times old women and quacks used for the purpose of curing different diseases incongruous mixtures of substances the properties and action of which upon the human system they neither knew nor studied, consequently materials were sometimes in application which were hurtful to an extreme degree. Judging from the description in the Supplement to last week's Journal, we have almost a parallel mixture proposed, with a similar ignorance, by Messrs. Kajenbusch and Kerr for the extraction of the precious metals from ores and products. These gentlemen propose to well roast the minerals, scorias, or slags containing the precious metals with one-fourth of their weight of coal, and throw the mixture red-hot into cold water twice. The ordinary fluxes, according to the nature of the material operated upon, are then used in conjunction with 1 oz. of sulphate of copper and 1 oz. of sulphate of zinc to 1 lb. of the material in order to create electricity, with an additional flux of (say) carbonate of soda to get the mass in a fluid state. Metals will then be produced in either crucibles or furnaces which contain the precious metals, and which can be refined in the ordinary way. I suppose the operations of roasting and quenching in cold water are done in order to get rid of some of the impurities which may occur in the substance operated upon, and to effect its disintegration. If so, there is nothing new in this method of procedure. If, however, Messrs. Kajenbusch and Kerr claim any further advantages than these I should like to know if they consider the roasting and quenching imperative in the preparation of all materials for their subsequent treatment by their process.

Now, I cannot see the benefit of the addition of the sulphates of copper and zinc to the ordinary fluxes unless the copper is intended as an agent for the collection of the precious metals. The proposers of this process inform us that these substances produce electricity. I should like an account of the method they adopted in ascertaining this interesting fact, and also to know what use is the electricity, supposing that it is generated? If the sulphates of copper and zinc are used merely as collecting agents the latter may certainly be dispensed with, as it is useless and even prejudicial, for that portion of the zinc which is reduced to the metallic state is immediately volatised, while the other portion remains in the slag inactive, so far as the concentration of the precious metals is concerned. The presence of zinc is to be avoided rather than courted, for the silver smelters always pay a less price for ore containing this metal, as they find it causes an appreciable loss of silver. The addition of copper in the state of sulphate is also to be condemned, since the presence of sulphates tends to cause a slagging, and consequent loss of copper. For this reason, if for no other, is the addition of both sulphate of copper and sulphate of zinc to be considered objectionable. And, further, sulphate of copper could not be profitably used for effecting the concentration or collection of the precious metals, as ordinary copper ores are cheaper and much better for this purpose. For substances containing little or no copper lead forms by far the best collecting agent, as it is more effective and more easily dealt with than copper. Further, the precious metals are more readily obtained from it, and it is cheaper than copper, hence its general use by silver smelters whenever practicable.

I am afraid that Messrs. Kajenbusch and Kerr can have very little knowledge of the subjects upon which they have been working. To judge from the short notice of their process, they seem totally ignorant of both the theory and practice of smelting, and the nature of the substances with which they would have to deal if their process were worth anything. —— T. G.

PUBLIC COMPANIES, AND LIQUIDATION.

SIR,—So large a proportion of the industry of the country is now carried on by joint-stock companies, and these so commonly go into liquidation, that it is essential to the interest of shareholders, workmen, and creditors that the law should exercise much greater control than at present over the persons entrusted with the winding-up of these bankrupt concerns. The abuse has now grown to such an extent that the profession of accountant, company wrecker, and liquidator has become more profitable not only than either of the learned professions, but than the business of merchants and traders. That everyone carrying on an honest business is entitled to fair profits is admitted; but just as the inhabitants of the sea shore who exhibit false beacons, and bring the unfortunate mariners upon the rocks, are regarded as criminals, and upon conviction punished accordingly, so those who systematically create dissension among the shareholders of joint-stock companies in order to profit from the ruin caused should be classed and punished as criminals of a far worse grade, because instead of destroying a single shipload they frequently ruin and starve hunderds of families who would otherwise continue in health and comfort.

The business of accountant is one that demands no special knowledge; indeed, every lad who has passed through a fairly good commercial school, and every clerk who has been for only a few months in a merchant's or other business office, is better able to show the true financial position of a tradesman or company's affairs than professional accountants, who as a class combine ignorance with conceit to an extent not found in any other calling. The record of their proceedings in each particular case would be ludicrous were it not that so many suffer from their malpractices. Upon receiving an appointment their first step is to "pump" the clerks and bookkeepers in order to obtain a little knowledge as to the books and the business to which those books refer, charging their employers fees for the whole period during which they are thus taking lessons. They then set about redoing what the ordinary clerks habitually and periodically do as a regular part of their duties; that is, they prepare a statement of accounts. But as the fraud would be too palpable, if they presented a statement identical with that of the regular clerks, the professional accountant usually arrange to take it to another date. Supposing the regular staff is in the habit of making up the statements for the quarters ending March, June, September, and December, the professional accountant chooses, perhaps, April 13 as a date for closing—the date of a general meeting, the date of a trade report, or even the marriage of a director will suffice for fixing the date if nothing better can be found—and then heavy fees are charged for doing the absolutely useless work thus decided on.

Now, if the malpractices of accountants, who it should be remarked are usually under the control of a solicitor of shady reputation and with otherwise limited practice, merely took part of the profits of the trader it would matter little; but he does more than this, he ruins the trader's business, and appropriates the money that would otherwise be available for the payment of workmen's wages and the claims of creditors. It is essential for the welfare of joint-stock industry, if not to prevent its ruin, that the connection of professional and outside accountants with public companies should be rendered illegal unless anything can be done to annihilate the class altogether. A very short enactment would secure the object—it should be provided that "in the event of any company going into liquidation the secretary of such company shall be the official liquidator, and that the remuneration of such liquidator shall in no case exceed an amount equal to the salary received by him as secretary during the six months preceding the meeting at which the liquidation is determined on unless he proves to the satisfaction of the Court of Bankruptcy (which would be the best tribunal to decide) that he has used due diligence in the winding-up, but that it was not practicable to close within the restricted time." The extension of time should only be granted from three to three months, and should not be granted at all without the previous printing and circulating among creditors and contributories of full statement of accounts to within ten days of the date of application.—*March* 21. CREDITOR.

LEAD MINES IN THE NORTH—WEST PATELEY BRIDGE, WEST CRAVEN MOOR, &c.

SIR,—I read with interest the letter of "Old Miner" in last week's Journal. I have known the district for many years, and watched the rapid development of several of its mines, which until lately were unknown to London capitalists.

The Cockhill and Sunside, as well as the Grassington and other mines, which have turned out such enormous bodies of ore for many centuries, are famed in this part of the country. A portion of the Cockhill and Sunside is at present being worked by the Pateley Bridge Lead Mines and Smelting Company, and from the recent developments in the deepest workings, and the prospect of meeting with large bodies of ore in the different ends, this mine bids fair to come once more to the front.

West Pateley Lead Mines immediately adjoin to the west, and on the same lodes. These mines during the past two years have been worked by a London company, upon a scale warranted by the discoveries made. From the barren moor, without a sign of life, there has within the past few months sprung up a busy scene. Roads have been made, buildings erected, engine started, and dressing of lead is now regularly carried on. Two shafts are being sunk—one on the course of a rich lode, from which returns are now being made; the other—the Craven Cross shaft, to reach the deep level coming up under it. Both these shafts are commanded and worked by the engine placed midway between them. All of us look upon this as one of the most promising enterprises now being carried out, as it is proposed by means of a cross-cut to intersect at a depth of nearly 60 fms. from surface many veins known to exist, and which have proved productive wherever seen near surface. Considering the enormous bodies of ore raised from Sunside and Cockhill at about the same depth, and that the identical lodes pass through the West Pateley Mines, which this cross-cut will intersect, it is certainly only a question of a short time and a moderate outlay to realise the same satisfactory results as its neighbours.

West Pateley Mines are being worked with great spirit, and under the present management cannot fail to reward those interested.

Adjoining this mine, again to the west, is a mine privately worked by some Leeds gentlemen. The prospects here are very encouraging. Less has been done than in West Pateley, but it is intended to work the mine more energetically as soon as the lodes are opened up. Lead in small quantities has already been raised, and, as far as seen, this property would appear to be quite equal in value to West Pateley.

West Craven Moor, as "Old Miner" says, "is a rich mine, large courses of ore have been touched, and profitable quantities brought to surface." Less has been done at East Craven Moor, but here, too, the prospects are regarded as very encouraging. Nothing much, however, can be said until the mine has been more developed.

The whole of this mineral ground has been worked at shallow depths for ages past by the simple appliances available, but until the Pateley Bridge and the Grassington Mines had developed their properties below water-level no knowledge of what the lodes would bear in depth could be arrived at, as operations hitherto had been mere scratchings at surface. With the present appliances, and the energy and skill being brought to bear, this district should prove the richest in the United Kingdom.

With your permission I will send you at an early date some few facts in connection with other mines in this district.

Skipton, Yorkshire, March 19. MINE AGENT.

MINING IN FLINTSHIRE—PANT-Y-MWYN MINE.

SIR,—I was glad to hear from an old friend of mine that the Pant-y-Mwyn Mine, near Mold, is turning out so well. I have been looking out for reports on this mine in your valuable Journal for some time past, but have failed to detect any. This may not make any difference in the price of the shares, as they are largely held in Liverpool, and the office being in that town the bulk of the shareholders can get what information they require from there, but I think we, the outsiders, should have a report now and then in the *Mining Journal*, so that we might know how the mine is progressing, besides giving publicity to the concern.

I was glad to hear that they have discovered a new lode, and a very rich one too, a few fathoms below the adit level, which is likely to turn out immense quantities of lead ore, as the lode contains a rib of solid lead ore fully 18 in. wide, besides good ore in the other portion of the lode for 6 or 8 ft. No doubt, from information I have received from parties who are well acquainted with the district, this property when properly laid open will be one of the richest mines in Wales, as it has five or six large and productive lodes in the sett, and very little done on them. I heard that they are about to sink the Modlyn shaft with rock drills, and that this is to be the engine shaft. I have been told by some of the men that there is good ore in the bottom of the old sump, and with the boring machine the shaft can be taken down very quickly; a communication can then be made by driving west with the shaft they are now using for an engine-shaft, and the rich course of ore in the new lode operated upon with energy, thereby greatly increasing the returns. I see they have already paid a small dividend, and have no doubt but what they will continue to do so. I am glad to see such good sales of ore at North Hendre Mine. This will have a tendency to enliven the district, and procure the attention of the mining public to this rich ore-bearing country.—*Aberystwith, March* 19. TOURIST.

SOUTH DE ERESBY MOUNTAIN.

SIR,—The attention of the public has recently been called to this mine both through the columns of the Journal and Reynolds and Co.'s Financial Monthly for March. It is to the prospectus and remarks in the latter I wish to call attention if you will favour me with a small space. As my name is associated with the concern I feel it a duty which I owe to myself, as well as to the public, to point out the fallacies in their method of reasoning, and, so far as can be known from the manner in which the writer has arrived at his conclusions, the "1,500,000*l.* for dividends" is as pure a myth as was ever conceived by the most visionary mind, and can but lead anyone to almost doubt his honesty of purpose. What I wrote about the mine was the result of a careful study of the property. I wrote it advisedly, and therefore do not desire to withdraw one iota therefrom, and when a friend of mine showed me the prospectus in question I was surprised that the reports written by Capt Bennett and myself should be made the basis of such fictitious calculations, and, wishing to get a copy, I sent to the publishers for one, enclosing stamps; judge my surprise at finding they had not the common courtesy to send the copy, or sufficient honesty to return the stamps. What does this imply? I need not say.

Allow me, Sir, to examine the basis of Messrs. Reynolds and Co.'s arguments:—"Your well-defined north and south lodes, on each of which there is a run of ½ mile, and two east and west lodes of about ½ mile, giving a total of 2½ miles of positive ore ground, which, as proved by Capt. T. Bennetts, is worth at least 1 ton of solid lead per fathom." How could Capt. T. Bennett have proved that there are 2½ miles of positive ore ground? His finding a bunch of lead on one lode in one spot does not in any degree prove that the other lodes are uniformly worth 1 ton of lead to the fathom. Every sound logician bases his arguments on acknowledged facts, and thus he arrives at the unknown by the known; but such a phenomenon as is here premised was never known, and therefore no sane man would ever think that because a lode in one place was worth 1 ton of lead per fathom all the other lodes were of the same value, and base his calculations accordingly. Are there not 50 other places in those lodes that are not worth anything? If so, there are 50 evidences agreeing that the lodes are positively worthless.

But taking the estimate of the value of the lode to be 1 ton of lead per fathom, how could that give 4*l.* per yard net profit? Lead is now about 11*l.* per ton, but say, for the sake of argument, that it will realise 13*l.*—that is, making an allowance of 2*l.* per ton for a rise—the full value of the lode per yard. Then (say) 5*l.* per yard for driving, 10*s.* per yard royalty, 1*l.* dressing, and 10*s.* sampling and putting it on railway trucks—14*l.* per fathom—showing a loss on driving the levels of 1*l.* per fathom—a loss of 2200*l.* where Messrs. Reynolds and Co. have made an estimate of net profit of 17,600*l.* After the ground has been opened it can be stoped away for little more than half the cost of driving, but even then, at 1 ton per fathom, it would not be safe to calculate more than 2*l.* per yard profit, to say nothing for salaries and other establishment expenses.

I wish your readers to clearly understand that I have no desire to depreciate the real value of the mine. I still adhere to all I said in my report, and am very much obliged to Messrs. Reynolds and Co. for the compliments they have paid me, but they must excuse me for not allowing such strong language, based partly on my report, to pass unnoticed. JOHN ROBERTS.

Llanrwst, March 19. ——

MONYDD GORDDU LEAD MINE, CARDIGANSHIRE.

SIR,—Would it be trespassing too much upon your valuable space to ask you to insert the following description of the Monydd Gorddu Mine? Although (from lack of money, not of the will) I have no shares in the concern it would be absurd to pretend that I am entirely unselfish in asking this, as I candidly acknowledge that I am interested in a neighbouring mine, which at present derives much of the estimation of its value from being on the Monydd Gorddu lode, borrowing—like the moon from the sun—its lustre from the greater luminary, but I may say that the attention which Monydd Gorddu is attracting locally, where it is generally looked upon as the "coming mine," and the constant enquiries made about it from all sides, lead me to believe that a slight history of this remarkable mine will be found interesting to many of your readers, more especially just now when so much attention is being called in your columns to the several important discoveries recently made in Cardiganshire, which bid fair to add largely to the millions of pounds already yielded in profits from the lead mines of this county.

The Monydd Gorddu, or (as it is described in the square No. 59 S.E. of the Government ordnance map) the "Mynydd Gorddu" Lead Mine, is situated in one of the best mineral districts of Cardiganshire, about seven miles from Aberystwith, and about two and one and a half miles respectively from the Bow-street and Llanfihangel Stations of the Cambrian Railway. The geological formation is the clay-slate, and the lodes run nearly due east and west, being similar in both respects to the most successful Cardiganshire and Montgomeryshire mines. Three out of the four parallel lodes already discovered therein will be found marked in the Government geological map above referred to, and one of them—the great champion lode of that district, and over 20 feet wide—is laid down therein for some miles, and has been traced even much further since that map was issued. At the spot where the character of this lode, and the country in which it is embedded, and indeed all the geological and other surroundings, most accurately resemble Monydd Gorddu—at the Havan and Henfiwch Mines—it is recorded that in the reign of Queen Elizabeth (when the prills of lead used to be carried on mules' and ponies' backs to the ancient smelting works near Eglwsfach) the Duke of Leeds, Earl Powis, Lord Burleigh, and the Earls of Derby are stated to have realised, even by the then rude modes of working, and when lead was only worth about 6*l.* per ton, 1,400,000*l.* profit—a tradition confirmed by the records of the royalties paid thereon to the Crown, which can still be seen at the British Museum. The blocks of lead broken from the Monydd Gorddu lode, both at surface and at the 24 fm. level, were composed of solid galena, incased in carbonate of lead, interspersed with gossan and carbonate of lime, forming such a matrix as is rarely seen, and were exactly like those broken from the Hafan Mines when partially worked in more modern times, and altogether it is not unreasonable to presume that Monydd Gorddu will eventually yield as largely as those mines, in which case the present improved appliances, and the increased value of lead, ought to ensure even larger profits than made in ancient times.

In the two mines immediately adjoining Monydd Gorddu, both on the east and the west, and, indeed, at almost every other point where this lode has been opened upon (which has chiefly been done since, and owing to, the rich discovery made at Monydd Gorddu when the cost-an pits were first opened on the back of the lode at surface) good lead has been found, and enough has been done to indisputably prove that it is one of the most powerful and masterly lodes in the whole county, but of course by far the most important evidence of its character is the enormous returns made therefrom at Havan and Henfiwch. One peculiarly favourable feature of Monydd Gorddu is that here the champion and another parallel lode interlace with each other, and form junctions with each other both longitudinally and vertically, the effect of which has been to form, even close up to surface, such a deposit of ore as caused at the time when it was first discovered quite an excitement in the neighbourhood, such an extraordinary surface discovery having hardly been known within the memory of man even in this rich lead-producing county. So much so that there was a scramble to secure this rich prize, every one wanting the whole, not merely a portion, which resulted, as usual, in the parties interested quarrelling among themselves, issuing injunctions in Chancery, and causing a suspension of all the works except such as were requisite to keep the lease alive; indeed, until the present enterprising proprietary obtained a preponderating influence, the litigation seemed likely to be interminable. With the new management, whose activity and indomitable perseverance under great difficulties I have watched with great admiration, a very different state of affairs supervened. The litigation having been closed and the title cleared, negociations (which proved to be very difficult and tedious) were at once set on foot to secure a continuous and plentiful supply of water-power, without which the mine, with all its reputed wealth, was almost valueless, the existing supply of water being very intermittent, and even at the best of times insufficient to carry on simultaneously the operations of pumping, drawing, crushing, and dressing, in all of which water was to be the motive-power.

To effectually remedy this state of things it was necessary to bring the water from a distance of several miles, and to construct in the midst of the mountains an artificial lake capacious enough to hold four months' supply of water, a costly and tedious work, which, with the co-operation of the neighbouring Court Grange Mine, has now been brought to the verge of completion, and when this is actually done Monydd Gorddu will very soon show how rapidly it can send to market the lead, of which it is indisputably proved it possesses almost any quantity. It does the management great credit that, even pending the construction of this reservoir (which is to contain 40,000,000 gallons of water), and in spite of the intermittent character of the present water supply and the consequent frequent interruptions and delays, they have all along been gradually opening up and developing the mine, which has been well laid out both at surface and underground.

In the latter the main shaft has been sunk to about 8 fathoms below the 24, in the sole of which level a splendid course of ore has been left going down rich, worth over 100*l.* per fathom; and when the 36 is reached, some few weeks hence, this splendid course of ore can be intersected (and laid open for stoping) by a short cross-cut of about 2 fathoms; even before this is reached, however, there are ample reserves of ore to be taken away in the meantime, the lode between the 24 and the 12 being as yet intact, while there are four stopes, producing in the aggregate about 40*l.* net profit per fathom, now at work about the 12, from whence during the last two years about 200 tons of ore, yielding about 2700*l.*, have already been sold, a return which would have been much larger had there been a sufficiency of water-power and crushing machinery, both of which are now being largely increased, so as to be ready for the approaching completion of the reservoir and the opening of the 36.

The only point about this mine that until lately puzzled the knowing ones, and to a certain extent damped the enthusiasm even of the most sanguine, was that after the wonderfully rich surface discovery the mine was apparently poor at the 12; and although the cutting it rich again at the 24 once more raised the spirits of the proprietory, there were some who looked upon the apparent absence of ore at the 12 as an indication that it was bunchy and uncertain;

but this point has been finally set at rest by a cross-cut through the lode at this level (where it is about 20 ft. wide, and impossible to be fully tested by an ordinary level) opening up a fine course of ore, worth 30*l.* per fathom, thus proving the continuity of the course of ore, and adding one more to the already unmistakeable evidences that Monydd Gorddu is a lasting and profitable mine, and destined very shortly to take a leading position amongst the great dividend-paying mines of Cardiganshire. JONATHAN PELL.

Cardiganshire, March 19.

WHEAL UNY, AND ITS MANAGEMENT.

SIR,—Will you allow me to call the attention of all who are interested in this mine (which I recently visited) to several serious points of mismanagement? In the first place, since I purchased my shares a change has been made in the mode of cleaning the slime tin, which I was sorry to see. At that time hand and machinery frames were in use on the dressing-floors, and as a proof that these are best adapted to save fine slime tin it may be observed that the streamers below this and other mines still confine themselves to their use, and it is reported that they are getting a good living out of the waste tin that finds its way into the river. Some of the Wheal Uny tin is as fine as flour, and consequently goes away with the foul water, on account of this class of stuff being buddled, a process which may answer well enough for coarse tin, but is quite unfited for fine slime. The self-acting frames are both economical and effective, and their use would assist in preventing the heavy calls to which the shareholders have been subjected.

Secondly, a great deal has been said about the flooding of the bottom of this mine during the last seven years, but as there are two pumping-engines, there appears to be sufficient power to keep the bottom of the mine drained, supposing there was sufficient pitwork. Now, it is reported that the pitwork belonging to one engine has been disposed of without the knowledge of the shareholders, though it probably cost originally 2000*l.*, and at the same time more pitwork is required in the mine. Under these circumstances the shareholders may be saddled with the cost of working a large engine at East Wheal Uny, amounting, probably, to 100*l.* per month, though there is no communication below the adit. It is now eight years since I purchased my interest in the mine, and at that time they were sinking below the 150 fm. level, and as they are now only sinking below the 160, we can only calculate upon 10 or 12 fms. in eight years, though it is well-known that the best tin ground is in the bottom, while the higher ground has been removed at a loss to the shareholders, inasmuch that several shares have been forfeited.

I was in London in the latter part of January, when the meeting of the shareholders ought to have been held, and I then pointed out to the secretary the state of the mine, and told him that without some change it must come to an end, as people could not go on continually paying calls. At the same time he refused to give me the address of any shareholder, and said if anyone had not confidence in the management he had better sell his shares, and under these circumstances I believe the meeting was postponed.

JAMES TRESSIDER, Mining Agent.

Bratton Fleming, near Barnstaple, March 21.

BLAEN CAELAN MINE.

SIR,—I am not usually very sanguine—in fact, many of my friends describe me as a continual "wet blanket," and I have always been rather prone to question the prices put upon mines when brought out as companies, the amount being too frequently utterly absurd, especially for untried mines, and it is to this more than anything else that I ascribe the reluctance that the public apparently display to support at all adequately an industry which is the great source of England's wealth. When, therefore, I do see a good example set in the opposite direction I feel that I ought, on the other hand, to do what I can to give it support; and, in my humble opinion, the Blaen Caelan Company deserves it.

I have lately inspected the property, and consider Mr. Pell is correct in his statement that from first to last there has been more cash expended on the underground development of the mine and the erection of its very complete surface plant than the amount charged the company *all* in shares, and, what is still more important, the present position and prospects of the mine fully justify the price. There is still a good bit of ore to be got from above the 10 fm. level, from whence and above the adit upwards of 10,000*l.* worth of lead has already been sold; there are extensive backs (ore ground) between the 20 and the 10 fm. levels, hitherto intact, and only just now being opened up for stoping, and the ore is also a fine course of ore (worth when I saw it, and it has since still further improved in sinking, 30*l.* per fathom) in the bottom of the winze, 8 fms. below the 24, and in my opinion there are five chances to one in favour of this already fine course of ore turning out far richer at no great depth below the present sinking, for there is every indication of there being a mass of ore underneath.

I like also the plan of having no free shares, but making every share liable at the outset for its proportion of such additional reserve capital as 4000*l.*; it is a good test of *bona fides*, and many good mines have come to grief which would now be making profits if the same plan had been adopted in the formation of the companies brought out to work them. THOMAS ROSEWARNE.

Throgmorton-street, March 21.

MINING IN NORTH DEVON.

SIR,—As by the accounts written from time to time in the Journal it is quite evident there is a rapidly growing interest in the mining localities of North Devon, it will, I presume, interest yourself and the general mining public to know what is really doing in these parts, and as a shareholder in several ventures I am in a position to give reliable information. There has been no less than seven mines opened within the past 18 months. The first I will mention is the Combmartin Mine, from which the first parcel of rich silver-lead has recently been sold. Here is a mine pronounced to be by your best men of great promise and exceptional advantages. A most extensive sett, with innumerable lodes and cross-courses in most congenial ground, can be worked down to 40 fms. unwatered, with large tracts of virgin ground in every direction, and it is an unconvertable fact that there are mines on the London market which cannot show one fifth the advantage and prospects of the Combmartin whose shares are readily bought and sold at more pounds than the shares in this market are at shillings. The next mine is the West Combmartin, about a quarter of a mile from the above, with no less than 13 well-defined lodes in good killas most favourable for the production of large quantities of lead, and all on the run of the celebrated Old Combmartin lodes, which is in itself quite sufficient to justify the most favourable professional reports made from time to time, and encourage us in our endeavours to develope it. This property can be unwatered by adit levels driven in from the cliffs to the remarkable depth of from 50 to 150 fms., whilst the whole sett can, according to Mr. Hitching's report, be thus easily ventilated, and all deads brought out at the lowest level to be carried away by the tide. There is in this mine a vein of mundic 11 in. wide, with 100 fms. of backs, and a very superior iron lode in sight for a long distance.

Another mine, also in the hands of private investors, called the Paracombe Silver-Lead Mine, and although but recently commenced, there is, I am credibly informed, some very beautiful lead seen but a few fathoms from surface. Then we have the South Molton Consols Mine, which from the large quantities of beautiful lead being raised, has created quite a sensation in the neighbourhood, and bids fair to return, from what they have already in sight, many thousands of tons of ore. A few months back a lead mine was opened by six Exeter gentlemen in the Park Valley, near Bow, an account of which appeared in the Journal the week before last. They have just cut a lode of remarkably solid lead in a shallow adit, and have already nearly 2 tons of clean ore, which assays 16 in 20 for lead and 15 ozs. of silver per ton. This mine is considered of great promise, and is of considerable extent in what may be looked on as an entirely new district. Two manganese mines have also been opened in North Devon, and a very powerful company has just been formed for working the great peat deposits of Dartmoor by Howard's process, and the tramway about to be laid down for connecting the peat grounds with the South-Western Railway will pass over vast deposits of china-clay, fine granite, iron, and tin practically inaccessible before cutting the line.

From this, Sir, you will see that the spirit of enterprise is not quite crushed out in these parts, and that North Devon is not likely to suffer much from the general commercial stagnation, and should things improve, as we all hope and have encouraging reasons to believe they must, then North Devon will come in for an important share of prosperity.—*Exeter, March* 20. FREDK. THOMAS.

HOLMBUSH MINE.

SIR,—The distress caused by the non-payment of the miners' earnings, and unexpected stoppings of the workings, has become so serious that a public meeting has been held for the purpose of obtaining relief, and means are being taken to alleviate the present wants of the men and their families. The constant representations with regard to the richest of the mine, and the splendid dividends paid to the fortunate shareholders, led the miners, tradesmen, and the public to look upon it as a source of inexhaustible wealth; instead of which it has proved a very bedlam of reckless promises and distressing disappointments. At the meeting called to help the poor men out of their trouble the promoters of the collapsed enterprise, and the happy recipients of the 30 per cent. dividends, were "conspicuous by their absence." A LOOKER-ON.

March 20.

NEW BRONFLOYD COMPANY.

SIR,—My attention has been called to a letter in the Journal of the 9th inst., signed "Miner," with a report by Capt. Roach following it. The wording of both letter and report seem to convey the impression that "Miner" is connected with the management of this company. This is not so, although the opinions expressed by Capt. Roach are those entertained, I believe, by the members of the board of directors of this company. THE SECRETARY.

March 21.

NEW CONSOLS MINE.

SIR,—In the Journal of last week a correspondent states that the merchant creditors may consider their case hopeless, as the machinery remaining unsold will not be sufficient to pay the debenture holders. Considering that merchants are solicited and oftentimes implored to give credit on the faith of representations that extra capital has been raised on debentures for the further prosecution of the mine, which cannot be accomplished with the merchants' supplies, this is a hardship on the creditor which will in future render it difficult for any Limited Liability company to obtain help from the merchants. What with flash professional promoters of companies, extravagant representations of discovered wealth, constant windings-up, slothful liquidators, and other incidental incumbrances, the Limited Liability Act would seem to be rapidly destroying legitimate mining by driving real and honourable investors of capital out of this old and wealth-creating field of enterprise.

March 21. AN OLD ADVENTURER.

LEAD MINES.

SIR,—The dulness of the trade in metals, and the consequent slackness in mining enterprise, have now for the last two years engaged the attention of a considerable portion of the public, caused anxiety on the part of investors, even amongst the most sanguine, and the enquiry meets one everywhere in the City and in the mining districts, "Is it likely that this state of things will be protracted?" Notwithstanding that lead has been such an essential element in the expenditure of war, and that copper since the introduction of modern cartridges has become so much more so than formerly, the vast struggle between the Muscovite and Ottoman Empires has proved that peace makes far greater requirements for all the superior metals than war, however extensive the scale on which it is waged, and, therefore, very much of the future prosperity of British mining depends upon the hope that war will for a long time to come give place to the progress of civilisation and tranquil international intercourse. It should, however, be kept in mind by those who are inclined to despond that however the home trade has drooped our commerce in the superior metals has not declined in proportion to the falling off of exports in general trade and in iron and minerals. This has been shown in minute detail in the *Mining Journal* in the review of the Board of Trade Returns for the last month.

Still when the progress and prosperity of our great colonies are considered it may well be thought surprising that our metal exports to them are not more satisfactory, but nearly all our colonies levy import duties on British metals, some exempting iron, but a few only, and all laying from 8 per cent. to twice that sum *ad valorem* upon the imports of metals generally. Special circumstances also prevent different colonies from being as good customers as they otherwise would be. The late famine and the revenue deficit in our Indian Empire explain the phenomenon there. Australia has become an exporter of tin and copper hither, the Cape of the latter, and at present business there is impeded by a native war. We are of opinion that in every direction there will be a rapidly increasing colonial demand for British lead. There is literally no colonial competition with it; and, as in England, lead is more used for building purposes than ever before, so in the rising towns and cities of Australasia, the Dominion, and South Africa lead must be obtained for architectural wants.

The chief encouragement in the above, and various other grounds for mining, is undoubtedly in lead mines. A lead mine can be usually worked with a smaller capital; returns are sooner made, for the metal lies nearer the surface than is the case with tin or copper. A large proportion of lead mines are argentiferous; zinc is now largely relied upon for the decorative as well as the useful in buildings, and blende is very often obtained in lead mines; indeed, some lead mines, so called, are mainly productive of blende, and the smelters are now much more economical than formerly, when large quantities were carried off in fumes to be precipitated into the sea. Zinc is much required for galvanised iron; and, in fact, its uses are tenfold what they were some years ago. Besides these considerations, it is, or ought to be, well known that lead and blende have a market as soon as brought to surface. Perhaps the most important of all the circumstances peculiar to lead mining is that the mines last longer than those for the other superior metals. It is too often the case that a tin or copper mine "runs off" after having been very productive, but it is remarkable how seldom this is the case with lead.

It has often been said that more fortunes have been made by mining than by any other enterprises. This is true, and more particularly so of lead mining; at all events, in recent times magnificent fortunes have been thus made more frequently than in other directions, and this has been, in fact, the case also to a more remote time, although tin has been the oldest known production of British mines. It is to be observed in connection with this part of the case that (as remarked above) lead mines being more cheaply worked, a greater number of them are in private hands, and it is, therefore, less easy to show the profits made. In every lead-bearing district of the United Kingdom lead mining has rendered great results. Shropshire, Yorkshire, Northumberland, Cumberland, Derbyshire, North and South Wales, the Isle of Man, Ireland, and in Cornwall, which has not made a great reputation for wealth in lead, but Trelawny, Wheal Mary Ann, Treburgett, West Chiverton, and other argentiferous lodes have rewarded the miner. The Van, in Wales, has returned much more than half a million worth of lead and blende, and the reserves are represented by competent authority to be worth about 2,000,000*l.* The Lisburne Mines, in South Wales, have also returned more than half a million. Upon a working capital of 7500*l.* 230,000*l.* has been divided. The shares are at a premium of 290 per cent. Great Laxey, Isle of Man, has paid in dividends 350,000*l.* Tankerville in about six years has sold lead to the value of 140,000*l* (round numbers) Roman Gravels has paid nearly 90,000*l.* Old Cwmystwith paid in dividends 394*l.* per share on an outlay of only 60*l.* each.

The paid-up capital of the leading dividend-paying lead mining companies exceeds half a million. The dividends already paid by them exceed 2¼ millions—a return of about 370 per cent.; the market value of these mines is about 1¼ million.

Whether peace or war issue out of the present diplomatic embroilment the value of lead must increase. We have seen that a war between two great nations, in which we were not involved, was not so good for the British lead miner as universal peace. But it is different when our own country is engaged in a military and naval struggle, for the demands, as in the case of the war with Russia 1853-6, upon our lead mines are excessive; at present stocks are unusually light, and apart from this the production has been diminishing for some years, owing to the timidity of capitalists, while the requirement of British lead is now increasing, and must increase.

At no juncture during a long experience was there a finer opportunity for investment in lead mining companies. The market price of shares is much below their intrinsic value owing to the recent depression. Usually with mining investors they buy in a rapidly rising market, and as eagerly sell if the tide turns for a little, whereas the true policy is to purchase when prices are low, and hold until good times and high prices ensue. Persons who have adopted this counsel have made thousands, and in many cases courageous and thoughtful men have realised splendid fortunes. Those who now pursue such a course will eventually realise large profits. Investment in dividend-paying mines will bring from 8 to 10 per cent. in many cases; but it is far wiser to invest in good prospective mines under the advice of trustworthy and competent professional men. There are two kinds of prospective mines; in one of these no returns of ore have been made. The mines are in their infancy, and await the application of adequate capital, industry, patience, and skill. The other class produces ore sufficient to pay for what is called "dead work," or nearly sufficient for that purpose, and in such the production will probably go on until the companies declare dividends. It is by well-advised investments in prospective mines that most of the large fortunes won by mining have been accumulated.

West Craven Moor Lead Mine is one of the best prospective properties of the day. It is situated in Yorkshire in the Craven district, and in the opinion of geologists acquainted with the vicinage, and of experienced practical miners, there is great wealth of lead in that region. The property is in 3000 shares at 10*l.* each, and taking all things into account it is one of the cheapest and most promising investments in the country. The locality is convenient for the transport of ore, and the carriage of wood and material for working, and there is a supply of water in every season of the year. The specimens of ore produced are very rich. Magnificent rocks of solid lead ore may be seen at the offices of the company. It is always of great consequence that any prospective mining property should be contiguous to well proved and rich deposits—such is the case in this instance. The Cockhill and Sunnyside Mine, in immediate contiguity, has been worked two centuries, and the same lodes pass through Craven Moor from east to west. West Craven lies east of the Grassington Mines, from which the Duke of Devonshire derived 70,000*l.* in a single year. There are 12 well-defined lodes in West Craven. It is worthy of notice that the ore is for the most part in solid form, requiring very little dressing.

The most experienced practical miners in the kingdom have born testimony to the brilliant prospects of the mine—*ex uno disce omnes*. Mr. Josiah Hitchins, discoverer of the Devon Great Consols, one of the grandest prizes that ever occurred in mining, wrote—"I did not expect to see lodes presenting evidence pointing so unmistakeably to the realisation of great and early success, which the discoveries already made may be said to ensure." East Craven Moor is another prospective mine of promise. The property of the company is also in 3000 shares of 10*l.* each. It is, as its name indicates, in the same neighbourhood, and is traversed by 16 lodes. Its characteristics as to the quality of the ore are nearly identical with West Craven Moor. The sett covers an area of 400 acres. A splendid rock of solid rich lead ore, weighing a quarter of a ton, taken from this mine may be seen at the offices of the company. It will be excellent policy just at this particular time for capitalists preferring certain home to uncertain foreign investments to secure an interest in these two properties.—*City, March* 20. OLD MINER.

Meetings of Public Companies.

VAN MINING COMPANY.

The annual general meeting of shareholders was held at the mine, on Wednesday, Mr. W. PAGE in the chair.

Mr. W. J. LAVINGTON (the secretary) read the notice convening the meeting. The directors' report was as follows:—

The directors submit the accounts for the year ending Dec. 31, 1877, which have been duly vouched and signed by the auditor. They show the sales of lead ores to have been 6470 tons, producing 88,985*l.* 13s. 4d., an average of 13*l.* 15s. 0¾d. per ton. The sales of blende ores, 2404 tons, realised 8019*l.* 0s. 9d., an average of 3*l.* 6s. 8½d. per ton. The receipts for rent amount to 248*l.* 13s. 9d. These three items together amount to 97,253*l.* 7s. 10d., of which 1598*l.* 15s. has been credited to waste halvan account for ores sold on that account, leaving a net receipt of 95,654*l.* 12s. 10d.

The expenditure for labour, supplies, royalty, rent, rates, income tax, and other charges amounts to 53,483*l.* 12s. 1d., which, deducted from the receipts, leaves a balance of 42,171*l.* 0s. 9d. as the net profit on the year's working.

The dividends declared and paid amount to 42,000*l.*, and the balance (171*l.* 0s. 9d.) is placed to credit of reserve fund.

The directors regret exceedingly to have to record a loss in the early part of the year by the failure of Burry Port Smelting Company, amounting to 3197*l.* 11s. 6d. which they have placed to debit of reserve fund account. The circumstances attending this failure were altogether of so disgraceful a character as to leave no hope of anything of moment being recovered in the shape of dividend, and the entire amount has been written off.

The reserve fund now stands at 1709*l.* 7s. 11d. The cost of engine, stamps, &c., for the halvan dressing has been charged to capital, which account is now closed. The remaining costs attending these floors, after crediting ores sold, stand at 2064*l.* 1s. 7d., which, with any further expenditure on that account, will be liquidated by sales in the current year.

It will be seen that the result of the year's working compares unfavourably with 1876, owing to the great fall in the prices of lead ore during the last half of the year, causing a reduction of many thousands of pounds in the receipts; this reduction has made further progress during the current year, and prices are now more than 3*l.* per ton lower than this time last year. Whether this untoward state of things is due entirely to the stagnant condition of commerce it is impossible to say. The directors can only express their earnest hope that a change may soon take place.

Mr. Wm. Page retires by rotation from the direction, and is eligible for re-election. Mr. H. J. Whaley, the auditor, also retires, and offers to renew his services.

The CHAIRMAN said it would, perhaps, be as well to take the accounts as read. This having been agreed to, he stated that the report was short, but contained full information as to the present position of the company. There has been a falling off in the return of 14,000*l.* in lead and 1600*l.* in blende, accounted for by the drop in the price of metals. The dividends, however, for the year have fallen off only 7500*l.*, although the total difference in the price received for the ore sold has amounted to 15,600*l.* The loss by the Burry Port Company would turn out, he was afraid, a total loss. He would also remark that the expenditure on account of the new halvan floors amounted to over 6000*l.*, but he was pleased to say that the expenditure on account of these matters had almost wholly eased, and that henceforth the beneficial results of the outlay would be seen, while the costs would, of course, be sensibly decreased. The appearance of the mine would be gathered from the agent's report, which he would now read:—

March 19.—I beg to hand you my annual report upon this mine, showing the work done since your last annual meeting:—Seaham's shaft is sunk below the 105 13 fms. 4 ft.; for the last 9 ft. sinking we have taken down part of the lode, which contains good patches of lead, at times varying from 1 to 2 tons, and sometimes 3 tons, per cubic fathom, but will average about 1½ ton. You will, however, bear in mind that merely the width of a shaft or level in this lode is nothing like sufficient to prove its value. Since we tapped the lode at this point we have drained the water from the whole mine into the shaft. The force of gas is stronger here than we have ever seen it in the mine before. The character of the lode is strong and masterly, full of small vughs, which makes it all the more difficult to sink, and considerably impedes our progress. When the shaft is deep enough, and we commence crossing at the 120, I believe, from present indications, that we may reasonably look for good results. The 105 has been extended during the year 30 fms. west of shaft, and now measures in all 68 fms.; the first 20 fms. driven was merely saving work; the remaining 10 fms. was worth on an average 19*l.* per cubic fathom. The lode in the present is worth 25*l.* per cubic fathom for lead ore, and is now entering a section of ground which in the 90 above is the richest part of the mine. By crossing at a point 64 fms. west of shaft we proved the lode to be 5 fms. 2 ft. wide, and worth for lead ore from 8*l.* to 14*l.* per cubic fathom. At several other points we have made short trials, and found the lode poor. The same level is extended east of shaft 35 fms. in the bastard, by the side of the main, lode, in which at times we met with nice branches of lead ore, although not sufficiently regular to put valuation upon it.

We have proved the main lode at three points by cross-cuts. At a point about 12 fms. east of shaft we have crossed north 15 ft., the first 4 ft. of which was worth 35*l.* and the remaining 11 ft. about 6*l.* per cubic fathom. At 20 fms. east of shaft another cross-cut was driven north 10 fms. 2 ft. long; the first 2 fms. was worth 14*l.* per cubic fathom, the next 6 fms. produced bare saving work for lead and blende, and the remaining 14 ft. was unproductive. The lode upon the whole was strong and masterly, and the indications such as would lead us to expect good results at a deeper level. We are also crossing again at the present end, and for the first 3 ft. we cut nice stones of ore, but the forebreast now is unproductive, although the lode is strong; we have crossed here 12 ft. The 90 west has been extended during the year 36½ fms., and now measures 104 fms. west of shaft. The level is driven upon the main lode-r, and has averaged in produce 5*l.* per cubic fathom for the year; at some points it is worth 100*l.* and upwards, and at the present end the lode is worth 58*l.* per cubic fathom. We have a pare of men stripping down the lode to full width at a point about 80 fms. west of shaft in the side of this level; the lode here is worth 16*l.* per cubic fathom. The lode has been opened to full width to a point 65 fms. west of shaft, making an extension for the year of 40 fms.; the lode will average for this section 20 ft. wide, and worth 26*l.* 10s. per cubic fathom for lead ore. I wish to remark as to the valuation of stopes; owing to the fall in the price of lead ore we make a corresponding decrease in the valuation of the lode. The 90, east of shaft, has been extended 30 fms., and now measures 67 fms.; we have cross-cut into the lode at the present end 22 ft., 18 ft. of which is worth for lead ore 7*l.* per cubic fathom. The lode has been taken down for a length of 15 fms. in the side of this level, at a point about 45 fms. east of shaft, for a width of 12 ft., where it is worth on an average 19*l.* per cubic fathom for lead ore.

We have also taken down the lode to whole width for a length of 22 fms. east from shaft, where it is worth 26*l.* per cubic fathom for 2 fms. wide. The following communications have been made from this level to the 105 by means of winzes:—the 33 winze from the 90 east, and the 65 winze from the 90 west. The 75 west has been extended 27 fathoms, and now measures 162 fathoms At a point about 150 fathoms west of shaft we crossed north 30 ft., and found the lode worth 8*l.* per cubic fathom for lead ore for about 6 ft. wide. The level is now driving in the side of a productive lode. This end is now within 38 fathoms of getting under Edwards' shaft. The lode has been taken down in the side of this level for a length of 12 fathoms from the 140 rise, where it is worth on the average 20*l.* per cubic fathom. We have commenced sinking a winze below this level at a point 120 fathoms west of shaft for the purpose of ventilating the 90 when it reaches this point. The stopes in the back of this level (eleven in number) are on the average worth 14*l.* 10s. per cubic fathom; mean width, 15 ft. The 75, east of shaft, has been extended 49 fathoms by the side of the lode, and now measures 100 fathoms. At a point 96 fathoms east of shaft we crossed north 23 feet, and found the lode unproductive. A winze has been sunk below this level at a point 50 fathoms east of shaft for the purpose of ventilating the 90. We have taken down the lode in the side of this level eastward from the 40 rise for a distance of 14 fathoms. The lode here is worth 14*l.* 10s. per cubic fathom; mean width, 9 ft. We have also stripped down the lode to full width for a length of 26 fathoms east from shaft, where it is worth 16*l.* per cubic fathom; the average width is 16 feet. The 60 west has been extended 15 fms., now measuring 166 fms. west of shaft. We took down a part of the lode at the 160, west of shaft, where it was worth 10*l.* per cubic fathom. A winze sunk at the 140, west of shaft, has been communicated with the 75. The stopes in the back of this level, east and west of shaft (11 in number), are worth on the average 14*l.* 10s. per cubic fathom; average width, 14 ft. 6 in. The 60 permanent level has been driven 35 fms. The 60, east of shaft, has been extended 13 fms., and is now 110 fms. long. We have crossed north 14 ft. at a point 105 fms. east of shaft, and found the lode unproductive. A winze has been sunk below this level at a point 80 fms. east of shaft for the purpose of ventilating the 75 east. The 45 permanent level has been extended west of shaft 37 fms, and now measures for the whole length 130 fms. Besides the driving of this level we have also driven two cross cuts to effect communication with the winzes and 45 fm. level, measuring in the aggregate 20½ fms. The stopes in the back of the 45 (three in number) are worth 12*l.* per cubic fathom; average width 13 ft. 6 in.

Surface: Our new surface work has been the construction of the halvan-floors, consisting of houses for 36 inch cylinder-engine and two boilers, two crusher houses, a large triple shed 130 ft. long by 108 ft. wide, and the fixing of the whole of the machinery, which is all new, and of the best description. This floor is in full work, and will amply pay the company for its construction. We have built a cottage for the pit-man at Seaham's shaft. We are now furnished with efficient machinery for working the mine underground and at surface for years to come.—Returns: The appearance of some hard bars of ground in the stopes in the back

of 75 fm. level caused a considerable falling off in their present value, and, having regard to the permanent interests of the mine, I determined to limit the monthly samplings for a time to 400 tons. In conclusion, let me add that if the 120 turns out as it now indicates, and with an improvement in the price of lead ore, the Van Mine has a prominent future before it.—W. WILLIAMS.

A SHAREHOLDER: Will the shaft be out of the lode by the time it reaches the 120?——Capt. WILLIAMS: No, it will not.

A SHAREHOLDER: Are the values placed on the various ends those of the present price obtained?——Capt. WILLIAMS: The values are taken at the present price of lead—12*l.* per ton.

Mr. THOMAS: Are the reserves greater or less than at the annual meeting last year?——Capt. WILLIAMS: If the 120 turns out as indicated, I consider the reserves are certainly increased. The 90 west has been driven on a splendid course of ore, while the 105 is improving, and apparently entering the same course of ore ground.

Mr. THOMAS: Is Edward's shaft sinking in the lode or in the country?——Capt. WILLIAMS: In the country. It is not sinking at present, but will be resumed when necessary.

Capt. WILLIAMS, in reply to other shareholders, stated that he was unable to account for the gas, nor had he as yet been able to get a satisfactory explanation from any of the many scientific gentlemen who had at various times visited the property.

A long discussion took place on the report, and the shareholders present were unanimous in expressing their satisfaction at the position and prospects. The accounts were adopted.

The retiring directors and auditors having been re-elected, votes of thanks were passed to the directors and manager for their services during the past year.

An examination of the new halvan floors and other surface works took place, when much satisfaction was expressed at the great amount of work done, which is of the best description. The proceedings then terminated.

WHEAL GRENVILLE MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Union-court, Old Broad-street, on Thursday,

Mr. R. W. GOOLD in the chair.

Mr. R. MITCHELL (the secretary) read the notice convening the meeting, and the minutes of the last general and committee meetings, which were confirmed. The secretary then read the agent's report, as follows:—

March 19.—Goold's Shaft: This shaft is sunk about 2 ft. below the 150, and the sumpmen are now engaged cutting ground preparatory to sinking below that level. The 150 is driven we t on the old lode about 9 fms., at which point we have turned to drive north of west to intersect the great lode. The lode in the 140 end east, on the great lode, is unproductive; however, we expect to enter a good run of tin ground in another few fathoms driving. The tribute pitches in this part of the mine are producing fair quantities of tin.—Western Shaft: The 150 end east is worth 12*l.* per fathom; the last 10 fathoms driven in this end vary in value from 8*l.* to 12*l.* per fathom. We may remark here that there is no level either above or below this point, and every fathom we go forward leaves 45 fms. of backs, which if a full force of men were kept stoping could not be taken away in the next five years. We expect to communicate this level with the 150, west of Goold's, in about five weeks from now, when we shall be in a position to take away a large amount of stuff. No. 1 stope, in the back of the 150 east level, is worth 9*l.* per fathom. No. 2 stope is worth 9*l.* per fathom. No. 3 stope is worth 7*l.* per fathom. The stope in the bottom of the 150 east level is worth 9*l.* per fathom. The stope in the back of the 150 west level is worth 6*l.* 10*s.* per fathom. The 140 east end improves as we advance, the present end yielding stamping work. The 130 west end is worth 8*l.* per fathom—a very kindly lode. The tribute pitches in this part of the mine are not looking quite so well. The water is now 6 fathoms below the 150, and we hope to drain the 160 by the end of the present week, when we intend to clean up the bottom of the shaft and examine the lode; we shall also sell some bargains in that level. We told you at the last general meeting that we expected to see the junction of lodes at Goold's about this time, but we have not made quite so good progress in our deeper levels as we expected, owing to the quantity of water we had to contend with. The water has been in our 160 fm. level for six months, and the 150 was under water two months; taking this into consideration, and the fixing of the pitwork at Goold's, which caused some hindrance, we think that our returns have been kept pretty regular. We shall sell in the next 12 weeks 50 tons of tin—March sale, 14 tons; April sale, 17 tons; May sale, 19 tons—50 tons. We shall sell 14 tons to-morrow, and we calculate to have 20 tons at the time of our next meeting in June, so in reality our next 12 weeks' produce will be about 56 tons. All the surface works are being pushed on with dispatch, our new north stamps axle will be set to work next week, and we shall get the other south axle on as fast as possible, probably be at work by your next meeting in June The mine, on the whole, is opening out pretty well, and when we get our axles to work we feel confident that with a slight advance in tin the mine will soon be self-supporting. The old engine will likely work another three months. Men employed, 132; boys and girls, 77=209 persons.

Telegram: March 21: Sold to-day 14 tons 9 cwts. 3 qrs. 8 lbs of tin, to Bolitho and Sons, at 38*l.* 17*s.* 6*d.* per ton.—T. HODGE.

The CHAIRMAN said he would make a few observations on the mine which had struck him very forcibly on the visit which he had made to it. He had only just returned from that visit, and the impression left on his mind after all that he had seen and thoroughly examined was one of unmixed satisfaction. Twelve months ago the committee were authorised by the shareholders to expend a certain amount of money on a much more powerful engine for extra stamping and burning power, and other improvements at the mine, and he would now tell the shareholders what had been done in the time. A new engine had been erected, and an engine-house put up in the most substantial manner. The engine was one which reflected the greatest credit on the builders. He maintained that such an engine as that had never before been put up in the county of Cornwall for the same amount of money. It was one of 80 in. cylinder, and worked in the most perfect order, and he (the Chairman) was not unacquainted with machinery and steam-engines. There had never been a hitch with it since it commenced working. The first stroke was made some weeks ago, and it had gone perfectly ever since. (Hear, hear.) A second engine had also been put up. This was a 38-in. cylinder, and the old 32-in. engine had to be taken out of the house, and the 38-in. put in, and the house enlarged and strengthened for stamping purposes. This had also been completed in a very workmanlike, lasting, and substantial manner, and had been at work for some weeks. The axle, to which there were 48 heads of stamps attached previously, had been working very well. It was a very critical operation to remove a large engine and keep on working the mine at the same time; but it had been done without any accident, and the returns of tin, though not quite what had been expected, had never fallen off more than one or two tons in a month. The greatest credit was due to the manager for what had been done, and for keeping up the returns to nearly 14½ tons per month. A third engine had been erected, one of the most beautiful he had ever seen for capstan purposes, which had already paid its cost. They had there an engine which had not only cost them nothing, but had put down the whole pitwork in the north shaft, which they had done him the honour to call after himself—that was 150 fms. of pitwork, with only one man, whereas under the old system it would have taken 30 men at least two months to do the work. Several extra buddles had been put up, and the floors had been enlarged, though they were still too small for their purposes. The work underground had been a shaft cut down from grass to a depth of 145 fms., and then to 150 fms., and now to 3 fms. below that; and beyond that the 150 fm. level, of the western shaft, had been driven a considerable length, and was almost whole with the north shaft. That was not a small amount of work to have accomplished during twelve months; and, though he had expected that it might have been accomplished sooner, and that at this meeting he might have been able to inform the shareholders what the junction of the two lodes below the 160 would produce, on the whole, he was not much disappointed. They had good reason to congratulate themselves that so much had been done without any accident whatever—a fact which spoke a great deal for the care and supervision which had been exercised over all the work done at the mine. So much for what had been done. Of course, the great question which would strike them all in a moment was what were they going to do, and whether at the present price of tin Wheal Grenville could be made to pay its way? Twelve months ago, when the committee said some little to influence the decision of shareholders with regard to this large expenditure, he had stated rather distinctly that the mine could be made to pay with the then price of tin, but tin had fallen in price very considerably since that time. But still he was not afraid to say now, after a closer acquaintance with the mine, and after spending a good deal more thought and time over the operations which were being conducted upon their property, that he was still of opinion that Wheal Grenville could be made to pay, even at the present low price of tin. (Hear, hear.) Had tin remained at 50*l.* a ton, as it was 15 or 18 months ago, the mine would be paying its way now without any extra expense upon it. With a return of 20 tons a month they would have 1000*l.* a month, and if they had to incur no extraordinary expenses that would about pay the costs of the mine. But tin had gone down to 40*l.* per ton, and they would have to economise in every department of the mine as much as it was possible to do, and they must also make the mine return not 20 tons but 30 tons of tin a month. (Hear. hear.) That would give them at 40*l.* per ton 1200*l.*, and the cost of producing that amount of tin each month could be kept down, he thought, to 1050*l.* or 1100*l.*, and they would then have a clear profit, and could afford to wait for better prices for tin, which he hoped they would soon get. But Wheal Greenville need not stay at 30 tons a month. It could do that now with a very little extra outlay; but his impression was that without any great outlay that amount could be exceeded. There were two levels going into their western ground to the west of the western shaft, one of which, he was pleased to hear Capt. Hodge say in his report, was still improving—they were the 140 and the 130, which were running into very good ground. They had there an expanse of ground opened and entirely drained which would not only take years to take away, but which would enable them immediately to return a much larger quantity of tin than they were doing now. Between these two levels they had no less than 45 fms. of backs, and the 150 all but untouched. In the plan of the mine which had been prepared by the Messrs. Hendersons the amount of ground to be taken away was set down at 7000 fms.; but to be on the very safe side he would take only half that amount, and nearly every bit of the ground would give them tinstuff of 2 per cent. of tin to the ton; then, if the levels going west should run into good ground, they would have 100 fms. there before touching the boundary all drained, and containing 50 fms. of backs, which they had nothing to do but to take away. In the face of these figures even Capt. Hodge, from whom it was very difficult to get a promise or even an estimate, was obliged to admit that if all the appliances were in accordance with the pumping power there was no earthly reason why instead of 30 tons they should not return 50 tons of tin a month, and the outlay necessary to accomplish this need not be so very great. To get 30 tons of tin a month they would have to expend either upon two other ovens or a calciner about 300*l.* or 350*l.*, or a little less for the ovens, and about 200 frames would have to be put at a cost of about 200*l.* Then five or six more buddles would cost about 50*l.*, and they ought to cover in the house in which the three large boilers were placed immediately, and also to cover the buddles over before the winter. The total cost of these improvements would be something under 800*l.*, and that would enable them to return 30 tons of tin a month. The whole of the work ought to be done in three months from the present time; and looking to the fact that their ends were going into better ground than they had seen before both east and west, he thought they would be perfectly justified in saying that this outlay should be incurred, so as to enable them to return 30 tons of tin a month. To get 50 tons a month no extra expense in these directions would have to be incurred. The calciner would be sufficient The additional power would be required in stamps. They would in the course of a few weeks have 72 heads of stamps at work. If they went in for 50 tons a month, and found themselves justified by the development of the property below the 150 in coming to the conclusion that they could safely depend on getting 50 tons a month hereafter, the necessary work could be done in nine months at a total cost of about 1500*l.* for the erection of 48 more heads of stamps. That would be the outside, and at the present price of tin 50 tons would give 2000*l.* a month, and he was prepared to say that the total monthly costs need not be more than about 1250*l.* or 1300*l.*, and that would leave them a profit equal to anything they could desire as long as tin remains at its present price, and they could then afford to wait for the price of tin to improve to give them larger dividends. He was perfectly convinced that that was the true state of the property, and that he had kept himself strictly within bounds. He had no doubt in his own mind that at the present price of tin they could make Wheal Grenville pay well, and that if tin went up 10*l.* a ton, they would have one of the most successful mines in Cornwall. (Applause.)

A SHAREHOLDER: At a further outlay of 2000*l.* about?——The CHAIRMAN: Yes, to get 50 tons of tin a month.

The SHAREHOLDER thought that it would be the best policy to spend this money if the committee were satisfied that they had got the stuff underground. (Hear, hear.)

The CHAIRMAN said they had the fullest justification for believing so. As the shareholders were aware their mine and South Condurrow, which was a very rich mine, were upon the exact run of the lodes upon which West Basset and South Frances were situated, and both those mines had returned very large sums to their shareholders. Wheal Grenville was to South Condurrow exactly what South Frances was to West Basset. West Basset was on the shallow or flat lode, and that was the position of Wheal Grenville with regard to South Condurrow. Both West Basset and South Frances had worked the lode as deep as Wheal Grenville, and one of them much deeper, but the value of the lode had never fallen off; on the contrary the deeper levels at West Basset had increased in value, and the deepest level at South Frances was the best that they had ever had, and was giving them a percentage of between 3¼ and 3¼, the average of Wheal Grenville being 2½ per cent., which was a very satisfactory average. If their lode increased in value in depth—as they had every reason to believe it would below the 160—there was no reason why they should not come upon a lode of tin equal to the lode at South Frances.

A SHAREHOLDRR reminded the Chairman that he had not mentioned the 60.

The CHAIRMAN said he had left that point out of his observations intentionally, but now that a question had been asked he would say there was no doubt that was a point which, beyond all the others in the mine, was of the most interesting character. This was the point which had given them the greatest amount of anxiety, and if they were baulked there, as some of their friends outside told them they would be, and that the lode would be much poorer there, then he could only say that the lode of the district must belie itself for the purpose of cheating the Wheal Grenville shareholders. Logically, the lode must be found as rich as it is now, if not a good deal richer. He had full confidence in the mine, and, together with the committee, had determined that no stone should be left unturned until they made the mine a paying one. He believed they could make it pay in three months from the present time. They had gone to a great amount of expenditure, but he believed that at the next meeting they would be able to show a clear balance-sheet, and that the total amount of extraordinary expenditure had been covered and paid for, barring the items he had mentioned, which would not be completed before that time. There was one other matter to which he would refer, which was the waste. There could be no doubt that they were losing 700*l.* or 800*l.* a year, and perhaps a good deal more, by the slimes, which it was believed contained 4 lbs. of tin to every ton of tinstuff. They could not afford to lose that in times like the present, and that must be saved either by the company putting up frames and buddles, at a cost of perhaps 500*l.*, or allowing somebody else to undertake the work. He knew people at the present moment who would be happy to put up the necessary machinery themselves, and undertake to give the shareholders half the produce. He believed one of their own shareholders was quite prepared to do this, and that would give them a 2*s.* 6*d.* dividend. In conclusion, he (the Chairman) moved the reception and adoption of the accounts and the agents' report.

Mr. F. LANE seconded the motion, which was carried unanimously, and a call of 5*s.* per share was made to cover the balance of liabilities over assets 1500*l.*

Some of the shareholders were in favour of making a larger call so as to provide the means of making the improvements suggested by the Chairman, but the matter was left in the hands of the committee, who have power under the resolution passed a year ago, to incur the further expenditure on the mine.

A resolution was also passed that immediately before the next ordinary meeting a special meeting would be held to forfeit shares in arrears of calls.

Mr. RULE proposed a vote of thanks to the Chairman and the committee of management, and speaking as a Cornishman living near Wheal Grenville Mine, he thought the shareholders were greatly indebted to the committee for the way in which they had managed the concern. He believed Wheal Grenville would prove to be one of the richest mines in Cornwall. With regard to the matter of the slimes, he was quite prepared to put up the machinery and treat the slimes upon the terms mentioned by the Chairman.

The motion was carried unanimously, and Mr. LANE having briefly responded, the proceedings terminated.

LLANRWST LEAD MINING COMPANY.

The ordinary general meeting of shareholders was held at the Guildhall Tavern, Gresham-street, on Tuesday,

Captain GILBERT in the chair.

Mr. EDWIN CARTER (the secretary) read the notice convening the meeting. The report and accounts were taken as read.

The CHAIRMAN said before formally moving the adoption of the report and accounts he would make just a few remarks. It afforded the directors very great pleasure to meet the shareholders for many reasons, more especially because they were in a position to give a very cheering and gratifying account of the property. He thought, taking into consideration the many difficulties which had attended their efforts, the mine had now arrived at such a state of prosperity that very few of the shareholders had expected. Another reason why the directors were glad to meet the shareholders was in consequence of the injurious reports that had been circulated in many directions. The directors had in no way taken notice of these reports—(hear)—because they did not believe it came within their province to do so. They believed these attacks emanated from parties actuated by spleen, or a desire to depreciate the value of their shares. But although the directors had not replied to these questions, they felt it necessary to take some steps in the matter, and when individual shareholders addressed any enquiries to the board advice was always given, and the directors stated their confidence in the mine, and that everything was progressing satisfactorily. The directors had been connected with the company since its formation, and they knew a good deal about it; and, what was very important, they had every confidence in their agent—Capt. Knapp. (Hear, hear.) There was no reason whatever that that confidence should be shaken, but for the satisfaction of themselves and the shareholders they had the mine inspected, and reported upon by Capt. Kendall, and this report, which had been circulated amongst the shareholders, must have fully satisfied the shareholders of the value of their property. As regarded the mine, he felt that the shareholders had reason to be satisfied. There was one very important matter—the reserves of lead. Those who had not had much practical experience of mining might think it strange that a sufficient amount of lead had not been disposed of to admit of a dividend being declared, and when he had not so much knowledge of the matter as he now had he had thought that a larger quantity of lead might have been sold. However, these and other similar matters had been left in the hands of their agent, and he had no doubt that where a mine was not meant for speculative or stock-jobbing purposes it was the better course to have a good amount of ore in reserve. All that the directors had endeavoured to do had been to make the company a permanently paying one; but prior to the last meeting they had to report that owing to the want of confidence in mining undertakings they had a difficulty in procuring the capital necessary to work the mine. However, in response to the application of the directors some of the shareholders came forward, and one in particular, in such a manner that regular returns were now being made, and he had no doubt that the mine would be a source of great wealth for generations to come. They had no fear of being again obliged to demand capital from any quarter, which would perhaps ease the minds of some of the proprietors. (Hear, hear.) As to the accounts, their able auditor was present, and would no doubt be happy to afford any information, but he might as well mention just one point that might possibly appear unsatisfactory to some of the shareholders, that was the amount of 2421*l.* due to the vendor of the property. Having a debt of that kind must always be a matter of some little anxiety to the directors, and it was one that would not be lost sight of, but in this case they had no fear whatever as to the vendor of the property, who was most interested in its success, had given a distinct understanding that the money should not be required until the shareholders were in receipt of a dividend, and that it would not be allowed to cripple or embarrass the company in any way. The shareholders had no doubt noticed that there was a depreciation in the value of the ore; but that was entirely owing to the fall in the value of lead, and that was the only blot in the whole affair. The value of lead had gone down in the year 4*l.* per ton, and that in itself made a great difference. Notwithstanding this the property was showing itself to be as good as it had always been described to be, and was daily producing more and more ore. There were one or two discrepancies in the reports of their own agent as compared with those of Captain Kendall and Mr. Lean, who had been engaged, he believed, by persons who had busied themselves a great deal about the Llanrwst property of late, but, having three reports, the shareholders would be able to form a pretty correct opinion of the value of their property. Perhaps Mr. Lean would favour the meeting with a few words.

Mr. J. P. ENDEAN said Mr. Lean was obliged to leave to keep an engagement.

Mr. BOWNESS thought Mr. Lean should have been at the meeting.

The CHAIRMAN said Mr. Lean was not the representative of the board, nor was he engaged by them.

Mr. ENDEAN remarked that Mr. Lean was engaged by persons who had most unwarrantably attacked the property.

The CHAIRMAN then moved the adoption of the report and accounts.——Mr. ENDEAN seconded the motion.

Mr. GRANVILLE SHARP thought there were several matters requiring explanation, and he would ask one or two questions. In the first place, there was an increase of 50*l.* in the amount due to Mr. Endean.

The AUDITOR replied that that was for the rent of the office for 12 months, and in reply to a further question the auditor said amongst the assets there was an item of 600*l.* for ore which would be available at once, so that the total assets were really 3340*l.*, or fully 350*l.* of assets over liabilities. He had examined every item, and had carefully examined the books and vouchers, and had found everything correct. Everything had been charged up as close as possible.

Major DE WINTON, in reply to Mr. BOWNESS, said the remuneration of the directors, which had been fixed by the shareholders, was 400*l.* per annum, and in reply to the same gentleman the CHAIRMAN explained that the item of commission arose from the fact that prior to the last meeting, in consequence of the difficulty in procuring capital to work the mine, a commission of 10 per cent. had to be allowed to those dealers who were able to place the shares. However, that was now at an end

The CHAIRMAN said there were at present three directors.

Mr. COLLINS said that in the last balance-sheet the directors' fees and secretary's salary amounted to 372*l.* 11*s.* 8*d.*, and this year it was 521*l.* 5*s.*

The CHAIRMAN said, in reply, that the remuneration of the directors had never been altered. The increase was due to the secretary's salary having been increased. There were only three directors at present, but the Articles provided that the number should not exceed five, and for that number the remuneration would not be increased. In reply to further questions, he (the Chairman) said the increase in the item of office expenses, printing, travelling, &c, arose from the fact that the directors had visited the mine twice during the year, and it included the solicitor's bill of 60*l.* Vouchers could be produced for every item.

Mr. SIDNEY MAYHEW, after a few general remarks, asked how many shares were still unallotted?——The CHAIRMAN said there were 657 shares at present unallotted. None had been issued since the accounts were made up—Nov. 30.

Mr. MAYHEW asked what amount had been expended on machinery since the accounts were closed?——The CHAIRMAN said the amount was about 600*l.* In reply to further questions from Mr. Mayhew, he (the Chairman) said the monthly expenditure at the mine varied very considerably, but the average was about 400*l.*, including merchants' bills, coals, and everything else. He had already explained that the falling off in the value of the reserves was due to the fact that the price of lead had fallen 4*l.* per ton in the course of the year. The buildings were all new, and it had not been thought advisable that anything should be written off for depreciation. One sale of ore had been made in the year, realising 550*l.*, and the samplings for a second sale had been sent out. That would be the fourth sale of ore the company had made.

Mr. MAYHEW then called attention to the discrepancy in the value set upon the reserves in the three reports from Capts. Knapp, Kendall, and Lean, and in conclusion moved as an amendment that the report and balance-sheet be received, but not adopted.

Capt. KNAPP said as to the difference in the valuations Capt. Kendall's and Mr. Lean's estimates were confined to the caunter lode, but they had 60 fathoms of valuable ground which were not reported upon, as the level was covered with dirt when they made their inspection. They had now penetrated 9 fathoms of this ground, and had found the lode to be 6 feet wide, and worth 2 tons of ore to the fathom, and he had no doubt that the whole length of the ground was worth more than that. He thought that fully accounted for the difference in the estimates. (Hear, hear.) With regard to the balance-sheet, they had spent 2000*l.* on the dressing-floors, and the reason why more ground had not been opened up during the year was because they had not the means of returning it. The machinery was now of greater value than the cost to the company had been. (Hear, hear.) Their pumping-engine, which was originally purchased for 1100*l.*, was sold to this company in as good a condition as new for 500*l.* All these things had been paid for, and there was no cause at present to write off anything for depreciation. With regard to the appearance of the mine it had improved since Capt. Kendall and Mr. Lean reported upon it. A new pumping-engine and stone-breaker had been purchased, and they could with the appliances now at the mine return more than double the amount of ore now being raised; but, of course, it took time to open out a mine so that the returns should be regularly kept up. The prospects of the mine indicated a much larger return in the future than 100 tons a month. The driving was now much easier, and they were paying about 36*s.* per fathom for what they had paid 6*l.*, 7*l.*, and 8*l.* for, and the lode was producing from 2 to 2½ tons of ore to the fathom. All the extraordinary expense was now at an end, and the stone-breaker was already upon the mine. A shed was being built over it, and that would very soon be finished, and then they could at once increase the returns, and put a larger number of men to work in driving the levels.

Mr. ADDENBROOKE said he had visited the mine twice, and the last time he took with him his own agent, and it resulted in his taking 100 shares more, and his agent, Mr. Barker, took 50. He was convinced from what he had seen that they had only to wait a little while to see the mine producing very good results. They could not expect to have a good mine at once, and it would be ruination to the company to declare a dividend, and not be able to keep it up. He believed Capt. Knapp to be honest and truthful, and that he was doing his work thoroughly well. There were one or two items in the accounts that ought to be stated a little plainer, and he hoped that would be seen to in presenting the next balance-sheet. He had the fullest confidence in the mine.

Mr. GREGORY thought it unreasonable to expect the directors to carry all the items of expenditure in their heads, as some of the speakers seemed to suppose. It was, he thought, quite sufficient for the shareholders to know that they had a valuable property, and that it was being worked honestly and energetically, and that it was provided with the necessary plant and machinery. When the mine was taken over it was a virgin property, and neither the Van, Great Laxey, or any other property could show such a reserve of ore as 36,000*l.* in such a short time as this company had been at work. They had reports from three different sources, one of which was from a gentleman engaged by parties antagonistic to the mine, who had done all they could to damage the property, and frighten the country shareholders out of their shares. He thought the directors had shown admirable diplomacy in engaging Capt. Kendall to give them an unbiassed report. From the three reports the shareholders could form a reasonable calculation of the value of the mine. In justice to the directors, he thought it could not be allowed to go forth that the accounts contained any inaccuracies. Everything had been lucidly explained, and, moreover, they had an auditor of the highest reputation, who had gone into every item, and had seen all the vouchers and cost-sheets. He only hoped the shareholders would not part with their shares upon misrepresentation, but that they would see for themselves the facts of the case. He believed the mine would soon yield them dividends, which would be continued for many years to come.

Mr. COLLINS wished distinctly to state that he did not question the correctness of the accounts or the efficiency of the auditor.

The AUDITOR said in future the accounts would show the expenditure on the mine and on machinery, &c., separately.

A SHAREHOLDER said he visited the mine in the interest of himself and the rest of the shareholders on Jan. 22, and was conducted over the surface works, and had also been underground. He had twice previously visited the mine, and he had been fully satisfied with all he saw there. He saw some samples of lead broken of a very good quality, and had brought some back with him to London.

Mr. MAYHEW, considering that full explanation had been given to his questions, withdrew his amendment.

The report and accounts were then unanimously adopted. The auditor was re-appointed, and the Chairman, who was the retiring director, was, on the motion of Mr. Endean, re-elected.

A DIRECTOR, in reply to a question, said the board met nearly every week, and sometimes twice in the course of one week. They had visited the mine twice during the year. There were three candidates for a seat on the board—Messrs. J. P. Endean, Shelton, and S. Mayhew.

Mr. ENDEAN, after stating his confidence in the mine, remarked that when the company was in want of funds he had taken up between 6000*l.* and 7000*l.* of the company's shares, as some of the shareholders might think it undesirable that the vendor of the property should be on the board, he was quite willing to withdraw his name from the list of candidates. As to the 2000*l.* which was owing to him, he was quite prepared to wait and take it out of the dividend, which he believed would be declared within six months of the present time. He proposed that Mr. Shelton, who represented between 400 and 500 shares, should be a director.——Mr. FULLER seconded the proposition, which was carried *nem dis.*

Mr. S. Mayhew was proposed for election by Mr. BOWNESS, and seconded by Mr. MULLINS, but the proposition was negatived on a show of hands.

Votes of thanks to the Chairman and directors and to Capt. Knapp having been passed, the proceedings terminated.

GREAT WESTERN COLLIERY COMPANY.

A largely attended meeting of debenture-holders was held at the Grand Hotel, Bristol, on Tuesday, to consult as to the position of the company. The aggregate amount of debentures held is 68,450*l.*, and about 30,000*l.* worth of these was represented in the room. Mr. JOSEPH WETHERED, colliery proprietor, as a considerable debenture-holder, was voted to the chair.

The CHAIRMAN said their position was something like this—68,000*l.*, of their money had been borrowed on security of the colliery, and the lease which formed the title to the colliery contained a forfeiture clause, so that the debenture-holders could not go in and take possession of the property. The opinion of three eminent counsel had been taken, and they agreed if there was a compulsory liquidation the leases were positively forfeited to the lessor, and the security for the whole of the money of the debenture-holders was gone. He thought the directors in not getting an assignment to trustees acted ignorantly and innocently, and the debenture holders were equally to blame for being so confiding. They went in for 10 per cent., and ought to have seen the forfeiture clause. He argued that they should, in the reconstruction of the company, endeavour to go as much as they could with the directors, and then, with a little money to carry on the colliery, and the assent of the lessors, they would, he thought, get on as a new company. If, however, they once drifted into anything like legal squabbles, the affair might get into inextricable difficulties, notwithstanding the fine property they possessed. The proposal of the directors had this disadvantage, that if the debenture-holders received 10 per cent., they gave up their security. According to the reconstruction scheme, if the company sold their colliery, 8-15ths would go to the shareholders, and only 7-15ths to the debenture-holders, which he did not think right. If they had preference shares redeemable to the extent of 3500*l.* per annum, they would accept less than 10 per cent.; and then in a few years the debentures would be paid off, and the property become that of the shareholders alone.

Mr. J. INSKIP (solicitor) said the directors in their scheme appeared to have begun at the wrong end; they should have consulted the debenture-holders, whereas the debenture-holders had not been consulted at all.

Mr. BRIGGS (secretary), referring to a remark made that the lessors, unless the debenture-holders agreed with the shareholders, would exercise their rights, said the lessors thought the shareholders had some rights.

The CHAIRMAN alluded to 3000 shares which had been issued at 5 per cent. discount, and said those who held those shares were liable for 12,000*l.* if they went into compulsory liquidation, though this would be very unjust, as the money was never intended to be paid. He went into the workings last week, and was exceedingly pleased with the colliery. The seams were thick, regular, and good, the quality of the coal was very first-rate. He did not mean to say it was entirely free from objection, but there were things in its favour. He was not speaking of inflated periods, but on an average they should get from 10,000*l.* to 15,000*l.* a-year profit; and if it was wisely worked it would pay that. He thought the limited system was bad, and the curse of the present period: but if that colliery was

worked properly it would pay back the money of the debenture-holders, and in the long run pay the shareholders.

A DEBENTURE HOLDER asked how much more money would be required to carry on the colliery?——The CHAIRMAN said he thought a small amount only would be needed. There was a profit of 4d. a ton, which was exceptional at this period. It was not a first-rate steam coal, but they were 5d. per ton nearer to the market than some other collieries, and there was a magnificant coke made which yielded 4s. or 5s. per ton on the small coal. The Dowlais Company were using it in the room of the No. 3, or the best coal in South Wales for coke making. They had an advantage of 5d. per ton on the coke, and 5d. per ton on the carriage. There was about 3000*l.* wanted to extend the sidings, about 1000*l.* or 2000*l.* more for finishing cottages. When the company were paying they could save 1500*l.* or 2000*l.* a year by an alteration in the coke ovens, but that was a future affair. The lessors would require them to have power to raise 20,000*l.* in the event of any unforseen occurrence.

Mr. KELLY (Cardiff) asked why there was a liability of 5*l.* on the shares referred to by the Chairman?——The CHAIRMAN said the directors neglected to register the shares as required by the Act.

Mr. KELLY thought if there was a liability they should be made to pay. He as a coal proprietor could report favourably on the property, and when times were improved it would be second to none in South Wales.

On the motion of Mr. A. LEVY it was agreed that a committee of debenture-holders be elected to confer with the directors as to an equitable adjustment of different interests.

The committee nominated consisted of Messrs. J. Wethered, A. Levy, W. H. Williams, Spencer (Cardiff), and Charles Thomas, director of the Midland Railway Company. Mr. F. James, Merthyr, is also to be invited to act on the committee.

SOUTH CARADON.—At the meeting, on Tuesday, the accounts showed a profit on the three months' working of 401*l.* A dividend of 512*l.* (1*l.* per share) was declared, and a credit balance of 2583*l.* carried forward. Capt. Holman reported that, notwithstanding the very low and depressed state of the copper market, he is pleased to say the mine is still looking well, continuing to yield the usual quantity of as good quality ore as it has for many years past. They only want a better price for it to increase the dividend.

WHEAL BASSET.—At the meeting on Tuesday (Mr. R. R. Broad in the chair), the accounts for the twelve weeks ending Jan. 12 showed a loss of 1138*l.* 18s. 11d., raising the debit balance to the sum of 7927*l.* 11s. 10d., which would, however, be reduced by sundry outstanding credits to 7044*l.* 16s. A call of 2*l.* per share was made. In explanation of the heavy loss shown in the balance-sheet the agents stated that a large proportion was accounted for by the number of men who had been employed on cross-cuts and non-productive points in developing the property. In reply to an enquiry the purser stated that they had received an application from the purser and manager of South Frances to admit the new shaft under the arrangement previously entered into for the repairs and restoration of the adit. The committee had considered that application, but they did not think it was one to which they could accede. He had no doubt they would be able to come to some satisfactory arrangement. At the same time there was provision made that they should look more especially to the lords' agents and the managers of mines to settle these points between themselves.

[For remainder of Meetings, see to-day's Journal.]

FOREIGN MINES.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices received March 4, 1878, ex Guadiana (s.), dated Morro Velho, Feb. 2:—

GOLD EXTRACTED TO DATE.—The produce for the second division of January—a period of eleven days—amounts to 15,462·0 oits. = 1782·5169 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	7,427·0	from 1329 =		5·588
Mineral free from killas	6,096·0	,, 837 =		7·283
Praia stamps	1139·3	,, 282 =		4·008
	14,653·3	,, 2448 =		5·985
Retreatment	808·7	,, — =		·331
Total	15,462·0	..... 2448 =		6·316

Equal to..... 1782·5169 ozs. troy = ·7979 oz. troy per ton.

Advices received March 18, 1878, ex Neva (s.), dated Morro Velho, Feb. 18:—

GENERAL OPERATIONS.—The gold produce for the month of January, though lower than that for December, may be considered satisfactory. Within the period an unusual amount of low-grade mineral has been treated, consequent on the extension and deepening of the new western sections. The output of mineral (6,500 tons) has been large, and the duty per borer fair, considering the nature of work performed.

GOLD PRODUCE FOR THE MONTH OF JANUARY.—The produce extracted during the above period amounts to 41,434·2 oits.=4776 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	19,504·8	from 3510 =		5·557
Mineral free from killas	16,321·5	,, 2317 =		7·044
General Praia	3,540·0	,, 806 =		4·392
	39,366·3	,, 6633 =		5·935
Retreatment	2,067·9	,, — =		·312
Total	41,434·2	,, 6633 =		6·247

Equal to 4776·6894 ozs. troy = ·7201 oz. troy per ton.

The above produce is the result of 30 days' extraction, one day being carried forward to February, being a short month. The general mineral treated contained a heavy proportion of poor quartz and killas, as above explained—the assay difference in the tonnage yield compared with December being 2·8 oits., or 23·8 per cent.

Total quantity of amalgam produced is 94,176 oits., the yield of gold being 43·99 per cent. At the Praia improving results are being obtained—total produce of gold being 4271·2 oits. The various dressing appliances are in a forward state.

COST AND PROFIT.

The produce for Jan. being	41,434·2 oits.	
Less loss in melting into bars....	340·6 ,,	
	41,093·6 at 7s. 9d. per oit. =	£15,923 15 4½
Cost		7,691 12 2
Profit		£ 8,232 3 2½

MINE.

Mineral raised from mine	6990 wagons.
Quarried per borer	1·92 ,,
Average number of borers daily	133·15
Average number of natives daily	191·37

At surface a new tramroad, 577 ft. in length, has been laid, the transport of mineral to the spalling-floor now being conducted with greater ease, and at a reduced cost.

SUMP 278 A AND B.—The general condition of the lode continues as previously reported. At the eastern extremity or forebreast of sump the width of the pure pyritic contents has slightly declined, owing to the flatter angle at which the sump is now sunk; as extension easterly is made this tendency to narrow must be expected, the productive body of the lode at its present dip being west of same. The sump has been sunk 5 ft. 6 in., and a new stope formed west of same.

LEVEL ABOVE SUMP.—There is no improvement to advise, the contracted and disordered part of the lode being without change. From the stope below there has been a limited extraction of fair mineral, with no alteration in its general condition; width of lode, 15 ft.

EASTERLY DRIVING UNDER ROOF AND STOPES 236 B AND 237 A.—From this point also the supply of mineral has been small, the more productive body of this eastern reserve being at a lower horizon; the driving has been advanced 5 ft. 9 in. No change.

STOPES 277 B AND 257 C.—The general body of mineral raised from the above section continues favourable; the width of the excavation is 39 ft., with pure lode contents, 23 ft. Beyond a limited extraction of mixed killas and quartz from the north side, little has been done at the latter section.

WESTERN SECTIONS 235 C AND 255 A AND B.—A large proportion of the mineral treated for the month has been raised from these sections; from the south wall side an average proportion of pyrites has been derived. With a view to a more extended scale of operations the work has been confined to the deep stope 255 B, and its extension easterly under the body of killas now forming the greater part of sections 256 A and B.

On the new stope, 234 B, a large amount of work has also been done. At this point, overlying the rich body passed through in the western level, there is a thick body of mineralised quartz, which it now becomes necessary to remove. In the western level the same favourable indications continue for an extension of the mineral body in this direction; the width of the forebreast is 11 ft., of fair-grade ore, with no appearance at present of either the north or south wall. Advance for the month, 9 ft. 2 in.

B SHAFT. The sinking duty—6 ft—is under that for December, owing to a brief delay in hanging the hauling windlass and divesting the surface water. A Darlington drill is now at work with moderate success.

A CROSS CUT.—The discharge of water from the old mine is being proceeded with steadily, with a notable decrease in its pressure.

GOLD EXTRACTED TO DATE.—The produce for the first division of February, nine days:—

	Oits.		Tons.	Oits. per ton.
General mineral	5,142·0	from ..... 1037 =		4·958
Mineral free from killas	4,061·3	,, ... 720 =		5·627
Praia stamps	1197·5	,, ... 278 =		4·375
	10,390·8	,, ... 2035 =		5·105
Retreatment	510·2	,, — =		·250
Total	10,901·0	,, ... 2035 =		5·356

Equal to ... 1256·7079 ozs. troy = ·6173 ozs. troy per ton.

The produce, though low, is as much as could be expected, the amount of mixed mineral treated being still large. The stamping duty for this division is very favourable, being at the rate of 226 tons per diem.

MINE.—The return for the first fortnight of February, embracing a period of 12 days, is as follows:—

Mineral raised from the mine	3210 wagons.
Mineral quarried per borer	1·90 ,,
Average number of borers daily	140·80
Average number of natives daily	216·91

No change to advise in either the western or eastern sections.

The gold troop was despatched on the 12th instant, taking 54 bars, weighing 65,615 oits., equal to 9570 ounces troy.

N.B.—The gold has duly arrived.

The following telegrams have been received:—

On Feb. 26.—"Produce nine days (first division of February), 11,000 oits.; yield 5·3 oits. per ton=6·7 old measurement. All going on well. (Delayed in transmission.)"

On Feb. 28.—"Profit for the month (January), 8200*l.*"

On March 4.—"Produce ten days (second division of February), 12,500 oits.; yield 5·6 oits. per ton=7·0 by old measurement. All going on well."

On March 12.—"Produce for the month (February), 37,000 oits.; yield 5·7 oits. per ton = 7·1 per old measurement."

On March 18.—"Produce eight days (first division of March), 10,000 oits.; yield 6·0 oits per ton = 7·5 by old measurement."

DON PEDRO NORTH DEL REY (Gold).—Report for January: Produce from 2567·41 tons, dry weight, 5000 oits.=2125*l.*; cost (including all general expenses, also cost of labour and materials, amounting to 208*l.* 14s. 9d., for erection of permanent pumping machinery), 2647*l.* 12s. 10d.

— Capt. Vivian (Feb. 10) reports—Permanent Pumping Machinery: Having now matured my plans, and should everything go well, especially the old machinery, to enable us to fork the water sufficiently low enough below the 35 so as to fix the 15-in. plunger-lift, I see no reason why the whole of the machinery should not be completed, and commence pumping water some time next month.

— Capt. Vivian, Feb. 18: Produce cleaned up 2117 oits.

— Telegram from Rio, dated March 9, referring to a later date than the above report, advised 6500 oits. for the month of February.

PITANGUI (Gold).—Mr. Hilcke (Pari, Feb. 14) reports that the adit had been driven a distance of 4 fms. 2 ft. during January. No alteration had been met with in the ground, which continued to be hard, and was letting out a great quantity of water. Mr. Hilcke considers that there will be from 10 to 12 fms. further to be driven ere intersecting the pizarra formation, and this distance he is sanguine can be driven within 2½ months time. Total distance to which the adit had been driven to Jan. 31, 94 fms. 1½ ft.

SANTA BARBARA (Gold.)—Mr. Hilcke, Pari, February 14: During January 1009 tons of mineral were stamped, producing 3436 oits. of gold, and 51 tons of refuse sand re-treated by the pulverising machine, yielding 21 oits. of gold, or a total of 3456 oits. of gold, or equivalent to 3426 oits. per ton of stone stamped. The produce of 3457 oits., valued at 8s. 6d. per oitava, amounts to 1469*l.* 4s. 6d.; the estimated working cost for the month at exchange, 24¼d., being 1145*l.* 1s. 1d., thus showing an estimated profit of 324*l.* 3s. 5d. for January. Mr. Hilcke reports that the lode at the different points of operation had undergone no change of note since the last advices, that at the top part of No. 4 stope, although still contracted and spare for quarrying, showed during the last few days a slight improvement. The lode in the shaft continued to look well, and appeared to be extending north, where a good productive lode of 8 ft. wide was left standing for future stoping. The return of 21 oits. from 51 tons of refuse sand, obtained by the pulveriser, still showed poor results for this process.

RICHMOND CONSOLIDATED.—The directors announce that the coupons and debentures falling due on March 25 will be paid on and after that date at the company's bankers, the Union Bank of London. The company have received the following telegram from the mine at Eureka, Nevada: Week's run, $90,000, from 1100 tons of ore. Week's produce of refinery, $55,000.

— R. Rickard, Feb. 27: During the past week work in the mine has been carried on with usual vigour, and very good results. The 200 drift is without change since last reported on. The stope above this level (No. 3 chamber) is improved; it is now turning out a better grade ore than it was. The 400 cross-cut (marked on map B) has entered a very fine ore body; we have drifted into it 35 ft., and on its course 20 ft., still showing ore in face of both drifts; all the distance drifted is in very fine ore, without a particle of waste as far as developed. We have also struck some ore in the 400 main drift marked on map C; the top of the drift holed into a cave, the bottom good ore; according to all appearance we have an immense body of ore in the ground between the 400 cross-cut and the end of the 400 drift. The distance from the No. 4 chamber to the end of the 400 drift is 200 ft., and in all probability ore all the distance, and from the end of the 400 drift to the 400 cross-cut there is a distance of 300 ft., and there is every reason to expect ore all this distance; the relative position of the ore in the stopes above the 400, and the ore discovered in the cross-cut is as shown by the sketch. The Nos. 4 and 5 chambers above the 400 are much improved since my last; they are turning out large quantities of very good ore. The Nos. 1 and 2 chambers are without alteration since last report. We have begun cutting out in the ore at the 400 cross cut preparatory to sinking, which will be pushed forward as soon as possible. The 600 cross-cut from shaft has been communicated to the 600 drift on quartzite, and a contract let to resume drifting on the quartzite. A winze has been started in the bottom of the 700, south branch; it is being sunk on the course of the extension of the compromise line; the bottom of the winze shows very good indications for ore. The 800 is still in broken ground, and looking very favourable for ore. The 900 on quartzite has been extended 30 ft. during the past week without any material change. The sinking of the winze below the 900 has been resumed; the water has not increased so far; if it keeps the same as it is now, there will be no difficulty in sinking to the 1100 ft. level. The ore body below Lizette tunnel, No. 6 chamber, is looking very well, the size of the ore body, so far as developed, is 30 ft. by 12 ft., all very good ore. The mine to day is looking better than I have ever seen it; the ore developments made during the past week have greatly increased the reserves. The furnaces are in good working order, and doing good work; we are smelting low-grade ore and pan drosses in No. 6 circular stone-furnace.

LONDON AND CALIFORNIA.—The clean-up for the month of February at the Original Amador Mine is estimated at $5000.

SIERRA BUTTES (Gold).—Result of the working at the mines for February: Sierra Buttes Mine: Total receipts, $19,341; total California expenses, including cost of mining and milling, $12,905.—Plumas Eureka Mine: Total receipts, $35,868; total Californian expenses, including cost of mining, milling, &c., $15,884.

FRONTINO AND BOLIVIA.—Jan. 7: Produce: 497 ozs. of gold, from 661 tons of mineral (average yield 13¼ dwts.); 3·3 ozs. of gold dust purchased from miners on tribute, under arrangement mentioned in previous monthly report, 1937*l.* Costs: Mine cost at Bolivia and expenses in London and Medellin, 1231*l.* 6s. 10d., paid for gold dust purchased, 713*l.*—1949*l.*, leaving a loss of 12*l.*

ANTIOQUIA (Frontino).—Advices from the manager, dated Jan. 7: Mine cost at Frontino and expenses in London and Medellin for December, 397*l.*; produce 57 ozs. of gold, from 65¼ tons of mineal (average yield 13 7-10 dwts. per ton), 160*l.*; loss, 237*l.*

BLUE TENT.—March 18: The directors have this day received the following telegram from Mr. T. Price: Another Yuba claim clean up, $4700.

CEDAR CREEK.—J. A. Stone, Feb. 28: My last letter to you was on the 14th instant, since which time I really have had no time to write to anyone, as there has been a series of backsets in my operations. First, the Baker shaft filled, and there being no good arrangement by which to open it in case it should fill it took us nearly a week to open it again. There is great danger in going into a tunnel when there is a large quantity of water standing above. Secondly, the ditch from the reservoir at Gold Run broke, and before I got lumber to repair it the miners' ditch broke and widened the break; then our main ditch went, and the great weight of earth above pressed large quantities of pipe-clay on the line of the ditch, and we found it impossible to dispose of it until we rigged up a hydraulic, and washed it away. The break has now reached the South Yuba ditch. I think we can protect our flumes from further damage; we shall use every precaution to do so. I cleaned up the Central on the 26th instant, and yesterday evening I retorted the amalgam, and run the gold into a bar. There is 302·90 ounces, which I think will coin about $6000. This is regarded here as an exceedingly good result. It will be two or three weeks before I clean up the Baker. I am having powder drifts driven for another blast. I have shipped the gold bar to the mint for coinage.

JAVALI.—The directors have received letters from their manager, dated Feb. 6. He reports that during the previous month the mill worked 25 days, crushing 1900 tons of quartz, yielding 577½ ozs. of gold, valued at 1400*l.* The expenditure, which included 51*l.* on capital account, was 987*l.* The dry season had set in, and there was no hope of working with water till June or July.

ALMADA AND TIRITO CONSOLIDATED.—The directors have received the following telegram from Mr. Breach:—New east lode (Providencia) discovered north in east cross-cut from tunnel; width of new east lode (Providencia) 1 fm.; ley of ores high; coppery black; looking well; raining.

FLAGSTAFF SILVER MINING COMPANY OF UTAH.—The directors have received a letter from the manager, dated Feb. 25, which contains the following information:—"The promising ore indications of which I wrote you have led to come good ore bodies; also there are good indications being followed." Also a letter, dated March 2, which states:—"The mine has much improved in last few weeks; there is now a large amount of good ore in sight. The superintendent thinks he can ship 50 tons per day for some time." The directors are informed that there are now 150 men employed at the mine, fully two-thirds being engaged in making further explorations.

CHONTALES CONSOLIDATED.—William White, Feb. 5: Estrella Mine: In the above mine during the past month I have had 71 sets of timber put in in the main level, which was necessary to keep it open, and will take now about 10 sets more to put the level out of danger, and make it secure. We have driven west in the main level during the month 6 varas. For the most part the lode here has been small and poor, and the quartz not payable to bring to the stamps, but the lode in the present end is now about 3 ft. wide, and showing every indication of soon becoming profitable.—San Sebastian: We have stoped from the high stopes, east of ventilation; rise, 317 cubic varas. Drove in shallow level 16 varas. We have stoped in the back of ditto 24 varas. Rose in the new rise in the back of this level 10 varas. Rose in the new rise in the back of the main level 8 varas. I would remark that these new rises now going up are carried double the length of the old rises, consequently 10 varas in the new rise is equal to 20 in the old, and 8 in the new is equal to 16 varas in the old, and produce the quartz accordingly. I have double length carried, and a stall reared up in the middle for ventilation in rising; also it will be a great advantage after when stoping the ground from above, as whilst one part is used for the quartz the other can always be kept clean for the proper ventilation of the mine below. We have driven in the main level during the month 20 varas. Here the lode for the last 6 or 8 varas has been very small and poor, and the stuff broken from the end thrown away as attle, not being of sufficient value to carry to the stamps; but, as I have before remarked about the character of the lode, this must be only temporary, and I shall continue the driving of the level with all speed. I find no reports here on San Sebastian Mine, saving a copy of the last sent by you, and a copy of Goyne's last report previous to my coming, but neither of these give much encouragement for the mine. The mine was then very poor, in a poor bar of ground, no stoping ground open, and the ends poor and suspended; also the rise then going up reported to be hard and poor, and without sufficient air for the men to work. There were then seven men here stoping from the back of the lode, west of ventilation rise, but they soon holed to the old workings, and last month this being totally worked out was suspended altogether, so that the whole of the quartz now being raised is from new ground opened up since last June. You may know in London by old reports former opinions respecting this mine, and can see whether it was ever thought to be a better speculation than the generality of the company's other mines, which may confirm my opinion, and give great confidence for the company's property. As yet I have been unable to do anything in the other mines, as until within a few days I have not had sufficient timber to carry on the work I have open, and have had to rise the price of nispro timber 10 c. per leg more than had been paid previously, as they have now a greater distance to fetch it, and before we begin any new work we ought to have at least $ 000 worth of timber in stock, or we are likely to be hindered, and drawn back in the work after it is begun. Raised for the stamps from the total ground opened during the month in San Sebastian 1545 cars, or 1319 tons of quartz, worth on an average 5¼ dwts. to the ton; also 84 cars of attle from the main level.—Machinery: At San Domingo mill during the month we have taken out some parts of the stamps, and newly keyed on the couplings; also changed the cams for two batteries, and fixed new stamps braces complete—also made new iron stays for water-wheel, fixed new launders, and repaired shallow level, and water-course for batteries. I have also set a contract of $140 to make new slides behind the stamps for receiving the quartz from the mines. I hope they will make an effort, and bring in the heads this month, or we shall not be able to do much more in stamping, as we are now working the last of the old heads that we could pick up. I also found four sockets, and now got them in working instead of heads, with the lifters keyed into the socket. During the month we have worked 12 heads by water power. The total quantity of quartz treated was 850 tons, which produced 238 ozs. of gold; average, 5½ dwts. per ton. There is about 850 tons more now at the stamps waiting treatment. Total cost for January, 727*l.* 13s.; value of the gold about 620*l.*; loss, 107*l.* 13s. The above cost includes the sum of 110*l.* charged for construction account. I hope by the next mail that the stamp heads will have arrived to enable me to make a full return.

PROVIDENCIA AND NEW ROSARIO.—Mr. Cummins, Feb. 14: I regret to have to report an extremely unfavourable change in the various points of operation.—San Miguel Winze: At the present moment there is scarcely any ore in the lode, which has changed from a white calcareous spar into a hard grey rock, which is usually present at the intersection of our eastern and western underlayers, and seldom or ever bear ore. San Miguel back is tolerably orey for about 7 to 8 varas (22 ft.) in length, and has yielded the greater part of the ore during the week. Id San Diego back ore of good quality, but narrow, and the ground hard.—San Jean Stope: This working proved a disappointment to us within a day or two after I wrote my last letter.—San Miguel North End: I have to report a complete change in the lode, which has turned into a white calcareous spar, the same as we had in San Miguel winze. My ignorance of dialling prevents me from stating accurately at what distance north of the Palma shaft the present lode will form its junction with those of the south-eastern cross-cut, but I should judge it to be about 40 varas (about 110 feet), and that junction will, no doubt, form the great bonanza that will be yielded by the mine.—Extraction: The extraction of ore for the fortnight amounts to about 11 tons, worth 11*l.* 11s. per ton, and 30 tons are in course of incorporation; 311 marcs of silver sent to the Mint realised $3740, or about 548*l.*

TOLIMA.—Frias: December returns, $9324·2½; deduct expenses, $7906·6½ =$1837 4¼. Equal in sterling to 304*l.* 11s. 9d. The December returns show 29 fms. 4 ft. 4 in. of ground expended, of which 9 fms. 2 ft. 8 in. were unproductive, leaving 20 fms. 1 ft. 8 in. of productive ground. The manager states—"The mine is in a most satisfactory state with respect to the mineral productions, there being already a fine reserve of rich ore, and no fear at all of any falling off in the returns; on the contrary, were it expedient the invoices might be doubled. The enclosed invoice of $9824 was produced in about ten days." The underground agent reports that the 40 west has been driven 5 ft. 5 in; the lode is unproductive, set to two men, at $45 per fathom. The 40 east is driven 5 ft. 8 in.; the ore is 6 in. wide, producing about 6 cwts. of export mineral per fathom; set to four men, at $50 per fathom. The 40, in Welton's, is driven 4 ft. 9 in., and has a solid vein of blende 3 ft. high in the end, giving 4 cwts. of export mineral; set to two men, at $30 per fathom. In the rise in the 40 slow progress has been made, on account of the vughy nature of the ground; 1 ft. 4 in. only has been risen during the month; set to two men, at $50 for the 3 ft. We expect it will hole to the winze above.

The 30 east is driven 4 ft. 6 in.; the lode in this end is 2¼ ft. wide, with 3 in. of solid blende ore, which will give 1 ton of export mineral per fathom; set to four men, at $55 per fathom. The lode in the eastern end of the 30 stopes is 3 ft. wide, with 12 in. pure export ore, one of the best stopes ever seen in the mine; work on company's account. The mineral reported in the 30 west end last month has again disappeared, and it has nothing in it now to value; lode 4 ft. wide, with plenty of pure pyrites; driven 7 ft.; set to four men, at $45 per fathom. The 20 east is driven 4 ft. 9 in.; the lode is pinched, and unproductive; set to two men, at $60 per fathom. The 20 east rise is risen 10 ft.: no mineral in back, rising suspended, and men put to drive on west rise; vein of good ore, 2 in. wide; set to two men, at $25 per fathom. We have driven west of Maralanda's vein 2 feet 9 in.; very little mineral; this is stopped for the present, and men put to drive on the same vein east of the cross-course, where there is a little ore; set to two men, at $35 per fathom. The 20 west is driven 7 ft through the same kind of ground as reported last month; we put a cross-cut to the north, and found another wall, carrying with it a vein of pyrites 3 in. wide, but of no value for silver; whole width of lode 8 ft.; set to two men, at $40 per fathom. A rise is commenced 10 fms. west of No. 10 winze to prove if there is any mineral standing between the 10 and 20; set to two men, at $40 per fathom.

Yankee Winze, in bottom of the 20: As this was drained by the level below, we have recommenced sinking, and good progress is being made; set to three men, at $45 per fathom.—Stopes Desagua: These stopes are entirely worked out; we are filling this up with deads from other parts of the 20 fm. level. Welton's rise from the 20 is up 6 ft.; the lode is 14 in. wide, composed of quartz and pyrites—a very promising lode; set to two men, at $40 per fathom. Esperanza shaft is set to eight men, for 9 fms., at $80 per fathom; good progress is being made; the lode is 3 ft. wide, but no ore to value.

Alto Gold Mine: During the last run of 132 hours, 120 in. of water being available, the superficial area of bed-rock cleaned up was 1428 square feet, and the approximate amount of ground washed 3690 cubic yards. The weight of the fine of fine gold obtained was 24 ozs. 16 dwts. 11 grs., of an estimated value of $510, equal in sterling to 95*l.*

MALPASO.—W. S. Welton, Jan. 19: Run No. 42, extending from Dec. 20 to Jan. 19, during which washing was carried on for 409½ hours with an average head of water of 456½ in., has produced 98 70 ozs. gold, valued at $1525 95=305*l.* The cost during the above period is estimated as follows:—Mine (running) cost, $1550; new ditch extension, $500; new opening cost, $227: total, $2277 = 380*l.* During this run the Medima dam broke, and caused a considerable falling off in the water supply, but for this the run would have been as good as last. Considerable time was lost in fixing pipe, which, on account of the excessive heat at this season, would draw apart when the water was turned off and on. With regard to running of dirt, the remarks in my last apply to the present run. I am now trying to wedge the lower sluice up to grade. The gravel continues soft, without much sand streaks, and is dipping down as if we had passed the drivage in the bed-rock. We appear to be just reaching an improved kind of bottom gravel. The bank not being high, and the gravel soft, we shall have to put in about 100 ft. more sluice at the head, where we have two branch sluices.—New Ditch Extension: All the heavy timber for the bridges has now been got in, and this work progresses favourably.—New Opening: We have now come to a rise in the bed-rock, but after about 40 ft. in distance it falls again. I have resolved to leave this piece of bottom standing for the present, as the delay in stoping it would be very great, and we have a very small supply of powder. The new opening is being brought up upon the bed rock from the Aquas Claras River, so as to obtain the whole available fall to this point, and for a distance of from 1200 to 1500 ft. no sluice can be put in as it will not be required for running off the tailings, and the amount of gold to be obtained from this sluice will not be sufficient to pay for keeping up a plank sluice. The bottom of this bed-rock sluice will be rocked, and may be cleaned up every six months. The main sluice I would put in as a double sluice, with branches of single sluice, so that there will be hardly any loss of time in cleaning up, and running may be continued on one branch whilst the other is being advanced. These sluices will be placed at some depth in the bed-rock, so that the whole of the gold may be cleaned up. The new opening will come in quite 20 ft. below our present sluice, the precise depth to be gained will depend upon the facility of bringing up the cut quickly.

MALABAR.—G. B. O'Reilly, Jan. 19: The Mine: I especially note what the board say under this head, and had anticipated their wishes in reducing cost as much as possible, and confining our operations to a single point of the bank in the direction which gives the greatest promise of improvement. We are now working on a face of about 400 or 450 ft. in width, and I have some hopes that by following the direction now before us we may open in more better ground. In the place where we are now running we are less hampered with boulders and pipe-clay, although two-thirds of our labour is still expended in dealing with these obstacles. For some time to come I see no reason to doubt that we shall be able to meet our working cost, and as long as we are enabled to do so I concur with the board in the advisability of prosecuting further explorations, even should they be effected at a small loss. Our present run was a rather unfortunate one, owing to a severe spell of wet weather, which caused two considerable suspensions of work—four days stoppage from the slides on the ditch, and nearly ten days from the heavy slide which touched our monitors. The machines really suffered but very slight damage, as the castings were uninjured, but the repairs were necessarily slow. I am happy to say that besides the loss of time there is nothing to deplore. We have since placed the monitors where there is no likelihood of their being exposed to risk.—Clean-up: We made a partial clean up on the 17th inst. after a run of 548 hours, and the resulting bar, No. 16, valued at $1498·50 (300*l.*), is remited by this mail; about $250 still may be estimated as remaining in the lower sluices, so that the result in spite of all accidents, &c., does not go far from covering cost. The run now commenced ought to give a better result in a shorter period, as we are more advantageously placed for working, and it is to be hoped that will lose no time from accidents. I think that we may be able to average between 300 or 350 hours per month, but this will depend in a great measure upon the amount of pipe-clay and boulders we have to deal with. Our system now is to wash during the night, and pick pipeclay and blast up grade during the day, and we clean up after getting in 300 or 600 hours. To clean up monthly would be a clean loss of time—some three or four days, which we cannot now afford to sacrifice.

ALAMILLOS.—March 6: The lode in the 40, west of San Felipe shaft, is strong, and very promising, yielding 1 ton per fathom. In the 20, west of San Felipe shaft, the lode is small, and less productive than it was, worth ¼ ton per fathom. The lode in the 25, west of Abercrombie's, contains good stones of ore, but not enough to value. In the 40, west of Abercrombie's, there is no improvement in the driving. The lode in the 40, east of San Enrique's, is very regular, with good stones of ore, worth ¼ ton per fathom. In the 100, east of Taylor's, the lode is very large, and spotted with lead. At the 100, west of Taylor's, a great length of valuable lode has been driven through, yielding 2 tons per fathom. In the 85, west of San Adriano, the driving is suspended while the men rise against Lozano's winze. The lode in the 60, east of San Victor, is sufficiently large, but does not contain any ore. In the 70, east of San Victor, there is a large, open, and productive lode, producing 1 ton per fathom. The lode in the 70, west of San Victor, is rather small, and of no value. In the 60, west of San Victor, the lode is larger than it was, and has a very promising appearance. In the 30, east of San Victor air-shaft, a great length of good lode was opened in the past month, worth 1 ton per fathom. The lode in the 30, west of San Victor air-shaft, is turning out well in this level also, valued at 1 ton per fathom. The 40 cross cut, south of San Carlos, has not yet reached the lode. At the 30, east of San Jose, the main slide is in the level. The 40, east of Judd's, is not so productive as it was, now worth 1 ton per fathom. The lode in the 50, east of Judd's, is improving in value, and getting larger, worth ½ ton per fathom. In the 50, east of Judd's cross-cut, the lode is small, even past, and regular, yielding 1 ton per fathom. The lode in the 70, east of Judd's engine-shaft, is open, large, and promising, valued at 1 ton per fathom. Plunkett winze, below the 50, is holed to the 70. Lozanos winze, below the 65, will be holed to the 85 within the present month. In Fermin's winze there is a strong lode, but without ore to value. The weekly returns were kept up very regularly during the past month, and the stopes are at present without any change of importance. The works at surface are going on steadily, and the machinery is in good working condition. We estimate the raisings for March (five weeks) at 225 tons.

RAVENSCLIFF.—The directors have received telegraphic advices from the company's representative in New Zealand, Mr. Charles Henry Turner, that operations had been commenced on their gold properties there under his personal direction.

For remainder of Foreign Mines, see to-day's Journal.]

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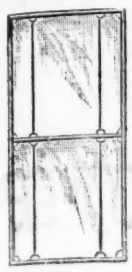
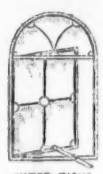

PAIR OF SASHES TO RUN WITH WEIGHTS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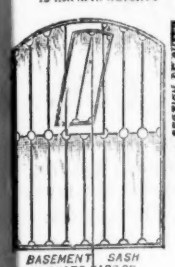
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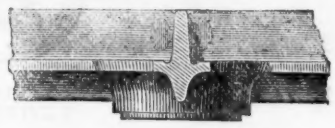

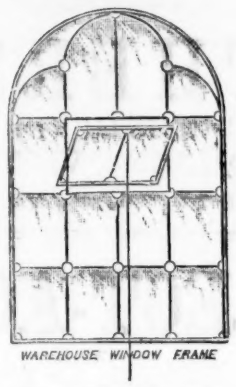
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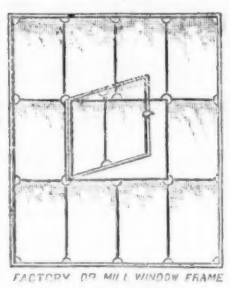
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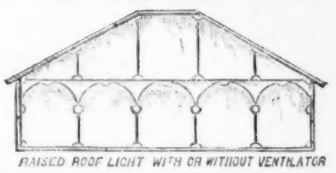
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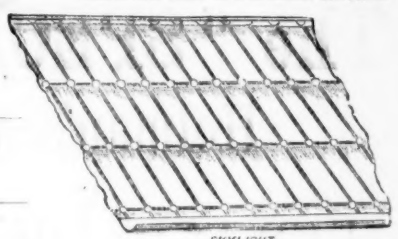
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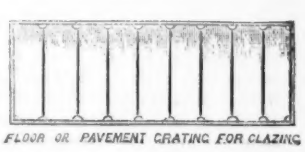
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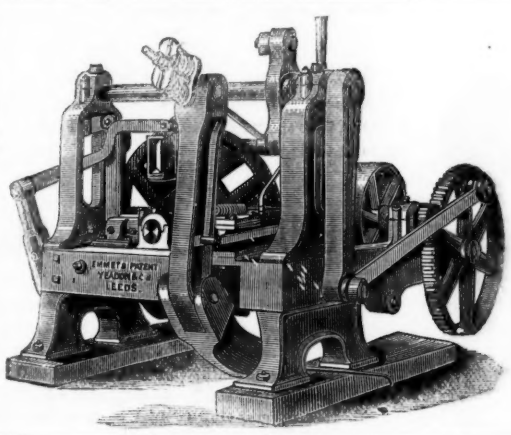

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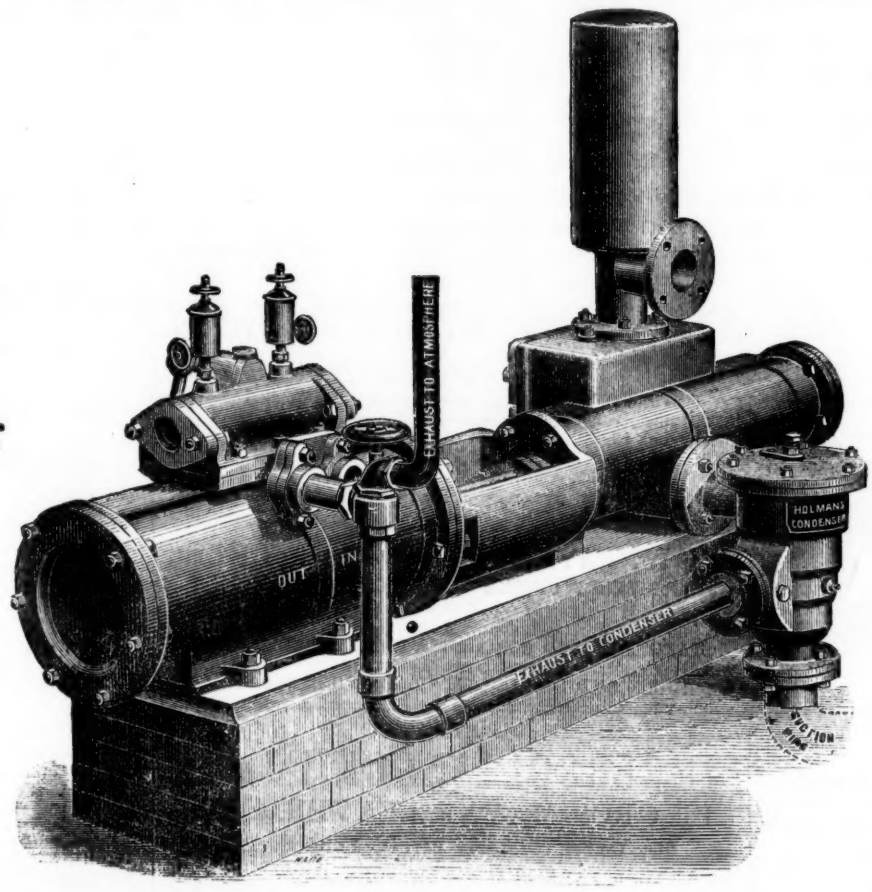

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Length of Stroke .....In.	9	9	9	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	18	12	12	12	18	24	12	12
Gallons per hour	680	815	1830	3250	1830	3250	5070	1830	3250	5070	7330	1830	3250	5070	7330	9750	3250	5070	7330	9750	13,000	5070	7330	9750	13,000	16,500	5070	7330
Price of Special Pump ...£	**16**	**18**	**20**	**25**	**22 10**	**27 10**	**32 10**	**25**	**30**	**35**	**40**	**30**	**35**	**40**	**45**	**50**	**40**	**45**	**50**	**55**	**65**	**50**	**55**	**60**	**70**	**85**	**55**	**60**
Extra, if fitted with Holman's Condenser and Blow-through Valve	£7	£7	£9	£11	£8 10	£11 10s	£12 10s	£9	£12	£15	£15	£10	£13	£15	£16	£22	£13	£16	£16	£22	£22	£16	£16	£23	£24	£35	£17	£17

CONTINUED.

Diameter of Steam Cylinder..In.	10	10	10	10	12	12	12	12	12	12	14	14	14	14	14	14	16	16	16	16	16	18	18	18	18
Diameter of Water Cylinder..In	7	8	9	10	6	7	8	9	10	12	7	8	9	10	12	14	8	9	10	12	14	9	10	12	14
Length of Stroke .....In	12	18	24	24	18	18	18	24	24	24	24	[illegible]	24	24	24	24	24	24	24	24	24	24	24	24	24
Gallons per hour	9750	13,000	16,519	20,000	7330	9750	13,000	16,519	20,000	30,000	9750	13,000	16,519	20,000	30,000	40,000	13,000	16,519	20,000	30,000	40,000	16,519	20,000	30,000	40,000
Price of Special Pump..£	**65**	**75**	**90**	**100**	**75**	**80**	**85**	**110**	**120**	**140**	**110**	**120**	**130**	**140**	**160**	**180**	**140**	**150**	**160**	**180**	**200**	**180**	**190**	**210**	**230**
Extra, if fitted with Holman's Condenser and Blow-through Valve	£23	£24	£35	£35	£20	£27	£27	£38	£38	£50	£28	£28[illegible]	£40	£40	£55	£55	£28	40	£40	£55	£55	£45	£45	£56	£60

Intending purchasers of Steam Pumps would do well to observe the great length of stroke, short steam cylinder, and short piston of the "Special" Steam Pump, as compared with the short stroke, long steam cylinder, and long piston of the Pumps of other makers, as the efficiency and durability of the machine, and the space occupied by same, greatly depend upon this. The advantage of long strokes will be obvious when purchasers are reminded that each set of suction and delivery valves of a "Special" Steam Pump with 24 in. stroke, running at 120 ft. per minute, would open and close only 30 times per minute, as against 120 times per minute in a Pump with only 6 in. stroke performing same duty.

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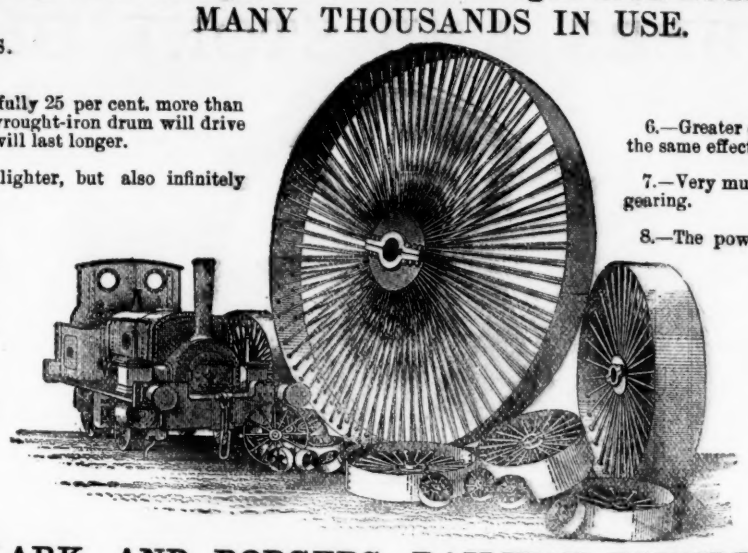

ADVANTAGES.

6.—Greater economy in steam power, as it requires less power to transmit the same effective force with belts than it does with gearing.

7.—Very much greater economy in subsequent repairs as compared with gearing.

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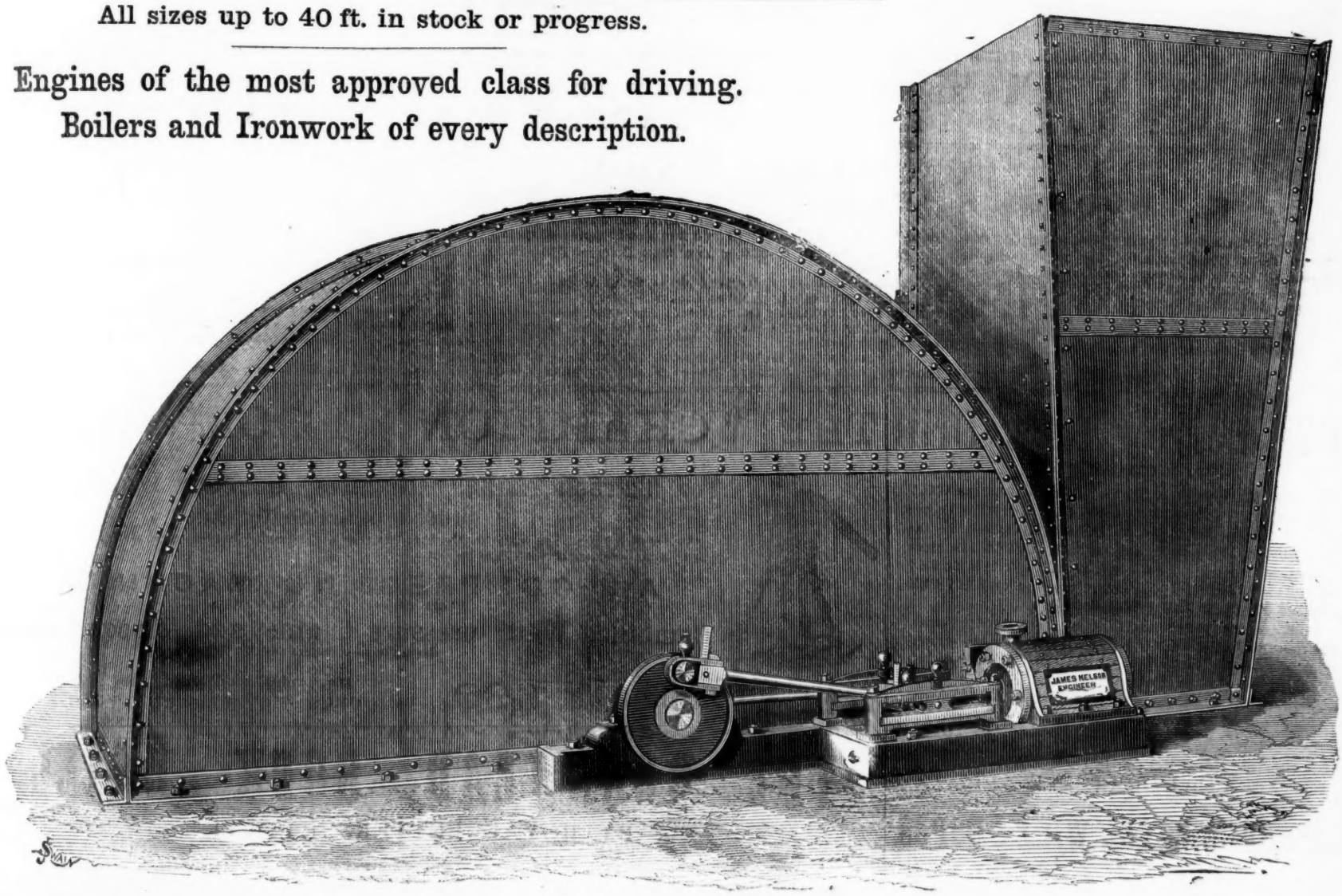

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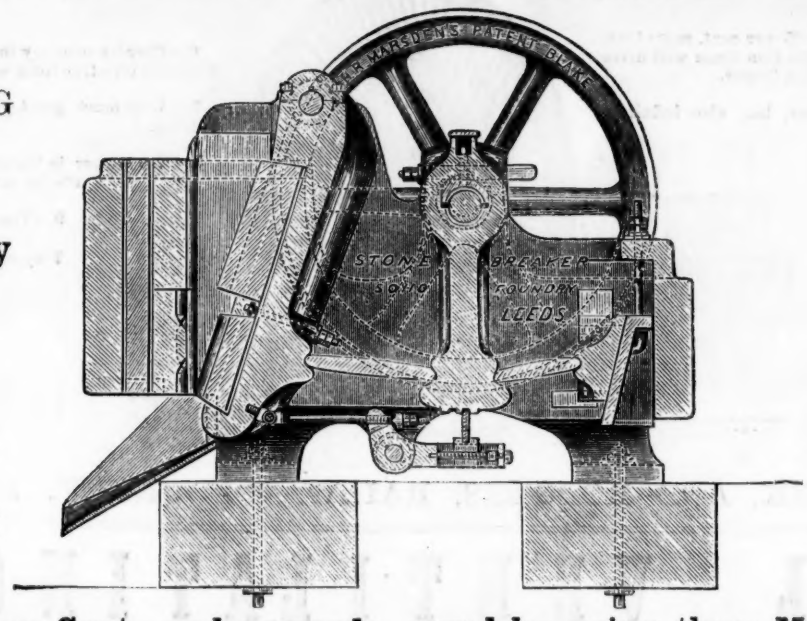

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